

STATE OF KANSAS
PUBLIC WATER SUPPLY
ANNUAL COMPLIANCE REPORT
FOR
CALENDAR YEAR 2002



JULY 2003

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I. KDHE's MISSION STATEMENT

KDHE's mission is to optimize the promotion and protection of the health of Kansans through efficient and effective public health programs and services and through preservation, protection, and remediation of natural resources of the environment.



II. INTRODUCTION

The **Kansas Department of Health and Environment (KDHE)** is charged with protecting and improving the health and environment of Kansans through the wise stewardship of resources. To achieve this, KDHE's Bureau of Water, Public Water Supply Section is responsible for regulating all public water supply systems in the state and assisting them in providing safe potable water to the people of Kansas. There are approximately 1,100 public water supply systems in Kansas, consisting of cities, rural water districts, and privately owned systems. These water systems serve small convenience shops up to a city of more than 300,000 persons.

This report is a summary of Kansas water systems' compliance with drinking water regulations for calendar year 2002. Included in this report are all violations of the maximum contaminant levels (**MCL**), treatment techniques, and monitoring requirements. This report has been prepared by KDHE to inform the general public of the quality of drinking water in Kansas and to comply with the federal **Safe Drinking Water Act (SDWA)**.

The previous report summarizing Kansas drinking water quality for calendar year 2001 is available at www.kdhe.state.ks.us.

III. PUBLIC WATER SUPPLY SYSTEMS

In the State of Kansas, a public water system (water systems) is defined by **Kansas Statute (K.S.A.) 65-162a** and **Kansas Administrative Regulation (K.A.R.) 28-15-11(a)** as a ***“system for delivery to the public of piped water for human consumption that has at least 10 service connections or regularly serves at least 25 individuals daily at least 60 days out of the year.”*** These systems are regulated by KDHE to assure citizens are supplied safe drinking water.

All water systems are required by state regulation (K.A.R. 28-15-18(a)) to be operated and maintained by personnel that are properly trained and certified. Properly trained operators are a critical component in assuring safe drinking water to the public. For this purpose, KDHE administers an operator certification program.

During 2002, there were 1,086 water systems serving water in Kansas. These water systems served approximately 2.5 million Kansas residents in addition to the transient population visiting or traveling through the state. Water systems are classified into two categories; community or non-community water systems. The majority of water systems are community water systems. Community water systems serve a year-round residential population. Non-community water systems serve non-residential populations. Non-community water systems can either be transient or non-transient. Transient non-community water systems serve different people each day. Non-transient non-community water systems serve the same people each day. Table 1, summarizes the three types of water systems. Table 2, on the following page, shows the types and numbers of systems in operation during 2002.

TABLE 1.
TYPES OF PUBLIC WATER SUPPLY SYSTEMS

- | |
|---|
| <ol style="list-style-type: none">1. COMMUNITY - <i>Same residential consumers every day.</i>
e.g.: towns, mobile home/trailer parks, rural water districts, subdivisions.2. TRANSIENT NON-COMMUNITY - <i>Different non-residential consumers every day.</i>
e.g.: motels, parks, airports, campgrounds, truck-stops.3. NON-TRANSIENT NON-COMMUNITY - <i>Same non-residential consumers every day.</i>
eg.: schools, day care facilities, industrial or manufacturing facilities |
|---|

Water systems obtain water from two sources: **groundwater (GW)** or **surface water (SW)**. Some water systems obtain water from both groundwater and surface water. (Figure 2)

Table 2 and Figure 1 on the following page, show the three types of water systems, the number of systems in each type, the number of systems using groundwater, surface water, or a combination of both, and the total population served by each water system type. Water systems that use both surface and groundwater are governed by surface water regulations.

TABLE 2.
SUMMARY OF PUBLIC WATER SUPPLY SYSTEMS IN KANSAS

TYPE OF WATER SYSTEM	GW	SW	GW/SW	TOTAL(%)	POPULATION
Community Public Water Systems	553	314	54	921 (85%)	2,519,300
Transient Non-Community Water Systems	97	6	0	103(9%)	3,128
Non-transient Non-Community Water Systems	61	1	0	62(6%)	24,869
TOTAL	711	321	54	1,086(100%)	2,547,297

The following four figures show the types, sources and population served by the different sources of water.

FIGURE 1.

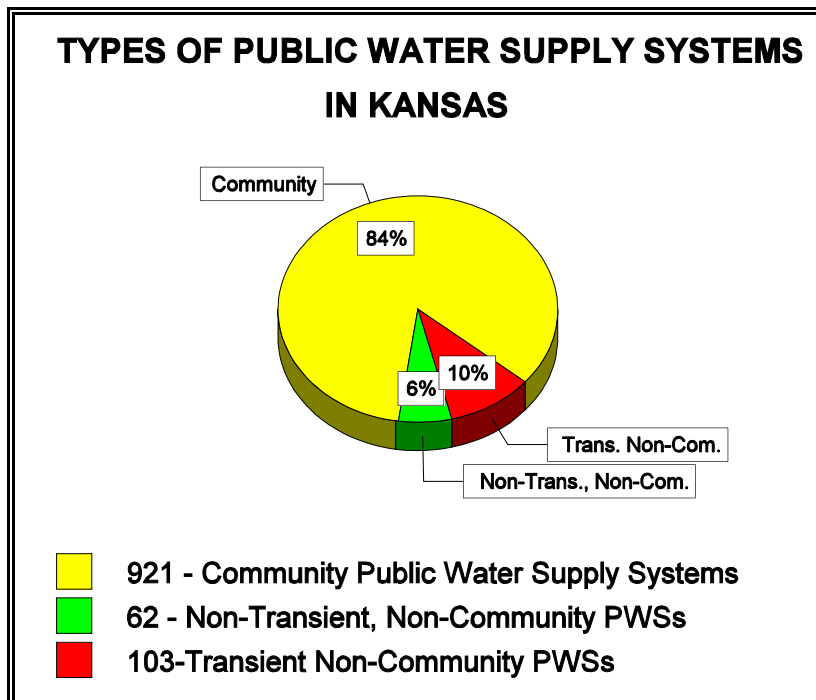


Figure 2. shows the number and percentages of community public water supply systems, according to the population served. 53% serve a population of less than 500.

FIGURE 2.

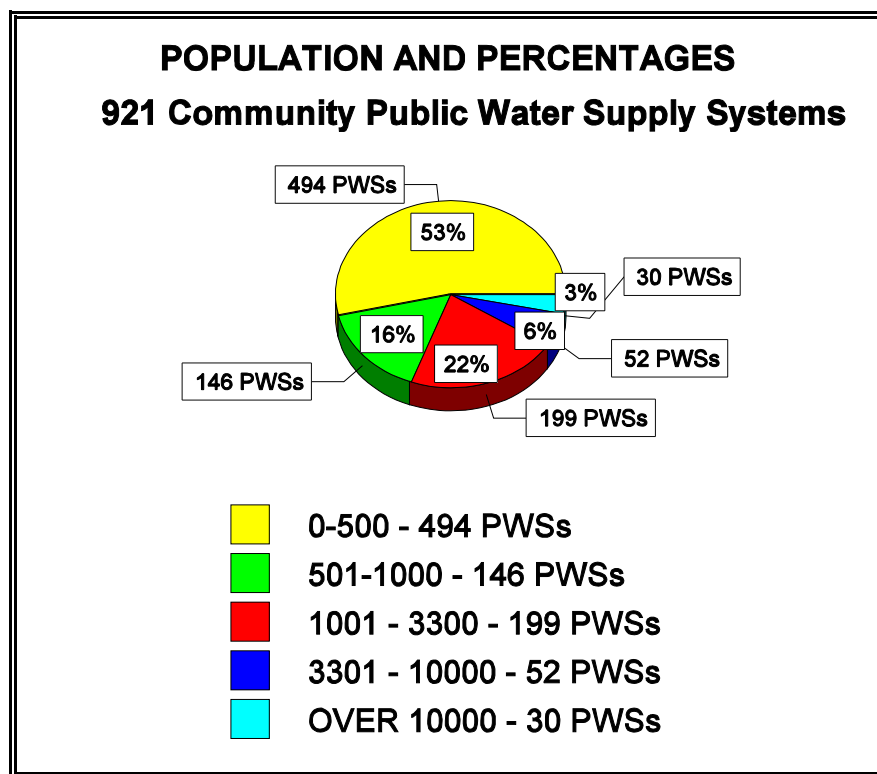


Figure 3. shows the numbers and percentages of systems using groundwater, surface water, or a combination of both.

FIGURE 3.

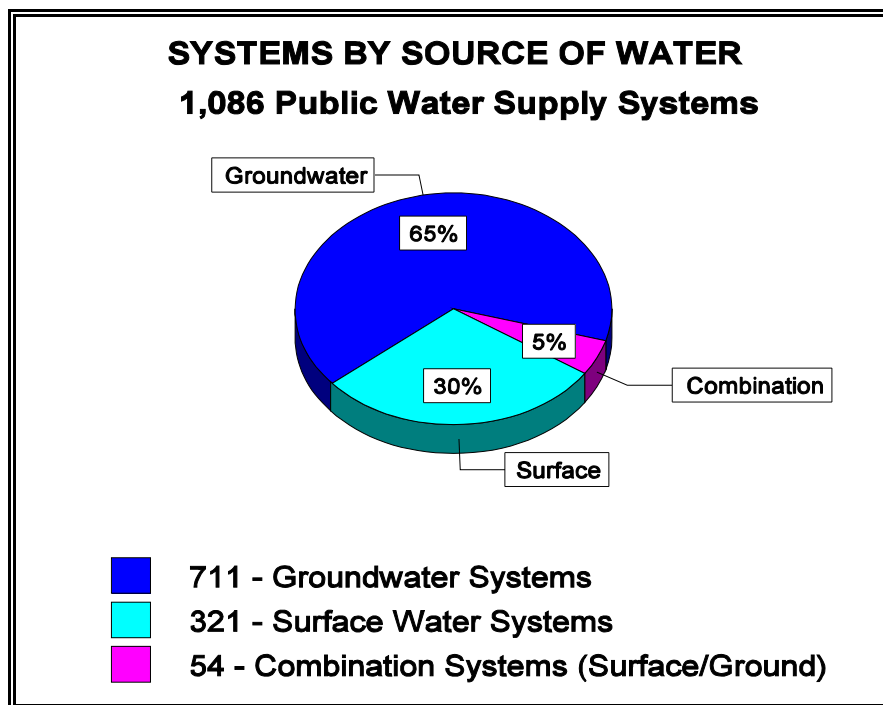
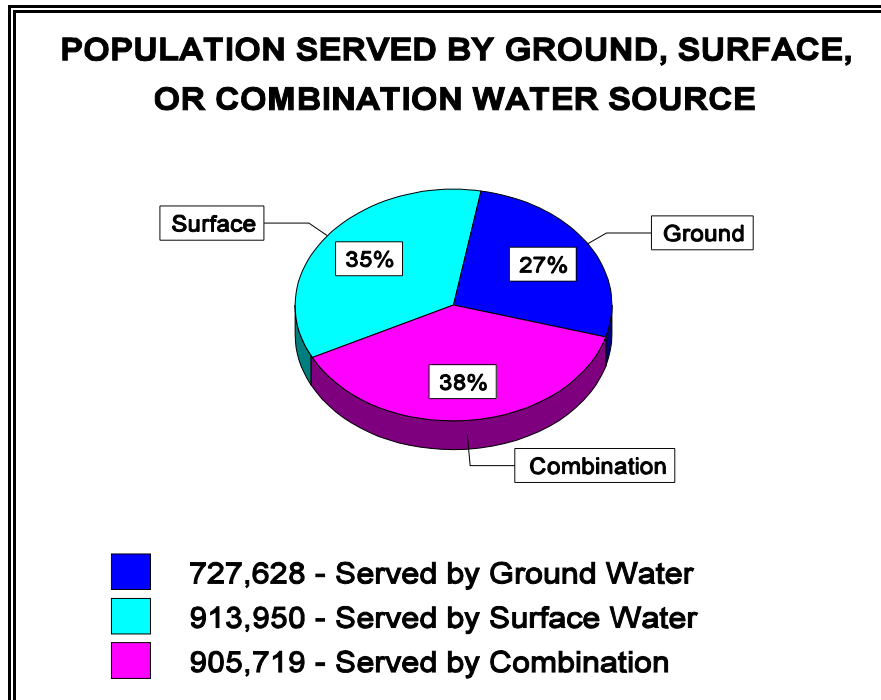


Figure 4. shows the resident population for all water systems served by groundwater, surface water, or a combination of both sources. These numbers include systems purchasing surface or groundwater from other water systems.

FIGURE 4.



IV. REGULATORY PROGRAMS

To help ensure good drinking water quality, several regulatory programs have been developed and implemented by KDHE. These programs monitor water quality in several different areas, ranging from microbiological organisms to inorganic and organic chemicals and radionuclides.

Kansas regulations establish maximum permissible levels for certain drinking water contaminants. These levels are known as **maximum contaminant levels (MCLs)**. In some situations, regulations also require application of minimum water **treatment techniques (TT)**.

To verify compliance with the MCLs and treatment techniques, regulations require water systems to regularly monitor and report to KDHE their water quality parameters. These requirements help to assure that all water systems provide safe drinking water for human consumption.

COMPLIANCE AND ENFORCEMENT

One of KDHE's objectives is to assist water systems in complying with all state and federal drinking water regulations.

The department attempts to use technical assistance rather than formal enforcement action to return water systems to compliance. When necessary, enforcement action is administered according to an escalation policy. The first step is to notify the water system by mail that a violation occurred. If three violations occur within any twelve month period, a directive is sent to the water system. If violations continue then either a Consent Order or an Administrative Order, with or without a penalty fine, could be issued.

The KDHE staff are available to assist water systems with regulatory concerns, and technical questions, and will refer the systems to third party technical assistance providers as appropriate.

KDHE **has not** issued any variances or exemptions from the SDWA requirements to any water system and has not received any request for variances or exemptions from any water system. All water systems are expected to comply with all drinking water regulations and to perform public notice if violations occur.

K.S. 65-101 gives the state the authority to issue boil water advisories as a way to assure the public they are not placed at undue risk from exposure to potentially harmful microorganisms as a consequence of consumption of drinking water from a public water system which is known to be or suspected to be contaminated. The public water system and/or KDHE will notify area media when the boil water advisory has been rescinded. During 2002, 24 boil water advisories were issued either by the public water system or by KDHE. The names of systems that incurred a boil water advisory are listed in Appendix B.

Water systems that have recurring monitoring and/or MCL violations are subject to having an Administrative Order, with or without penalty, issued by KDHE. Before an Administrative Order is issued, KDHE first issues a Directive in an attempt to get the public water supply to correct the violation.

A summary of all enforcement actions during 2002 is presented in Table 3.

TABLE 3.

DIRECTIVES

SYSTEM NAME	ACCT #	ISSUED DATE	VIOLATION(S)
Burr Oak	E0000	07/25/02	Bact & PN (nitrate)
Casey's General Store	O6818	12/03/02	Bact
D & W Water Company	O7515	*****	Pb/Cu
De Dee's #5	H8010	03/18/02	Bact
De Dee's I-70	O751H	01/14/02	Bact
Doniphan Co RWD #1	N4710	06/21/02	Bact
Doniphan Co RWD #2	B8310	07/16/02	Bact
Elgin	H2000	10/31/02	Emerg. Not. & Disinfection
Franklin Co RWD #3	T4211	07/16/02	Bact
Leavenworth Co RWD #10	N1013	07/16/02	Bact
Maize Pizza Hut	O6815	08/14/02	Bact & PN
Sedan	U8500	06/17/02	SWTR
Thunderbird Marina	M3020	07/25/02	Bact
Western Acres	L6516	01/17/02	Bact
Wilsey USD #417	Y4410	03/14/02	Bact

CONSENT ORDERS

SYSTEM NAME	ACCT #	ISSUED DATE	VIOLATION(S)	CASE #
Country Store Inc. - Maize	O6819	10/23/02	Bact & PN	02-E-0150
Ellis Co RWD #6	X3010	11/21/02	Pb/Cu, IOC monit, PN	02-E-0096
Greenleaf	J7000	02/12/02	Nitrate	02-E-0017
Leon	N4500	12/10/02	Pb/Cu	02-E-0012
Pheasant Acres	L6508	08/02/02	Bact & Nitrate & PN	02-E-0026
Viola	X3200	12/23/02	Nitrate	02-E-0275

ADMINISTRATIVE ORDERS

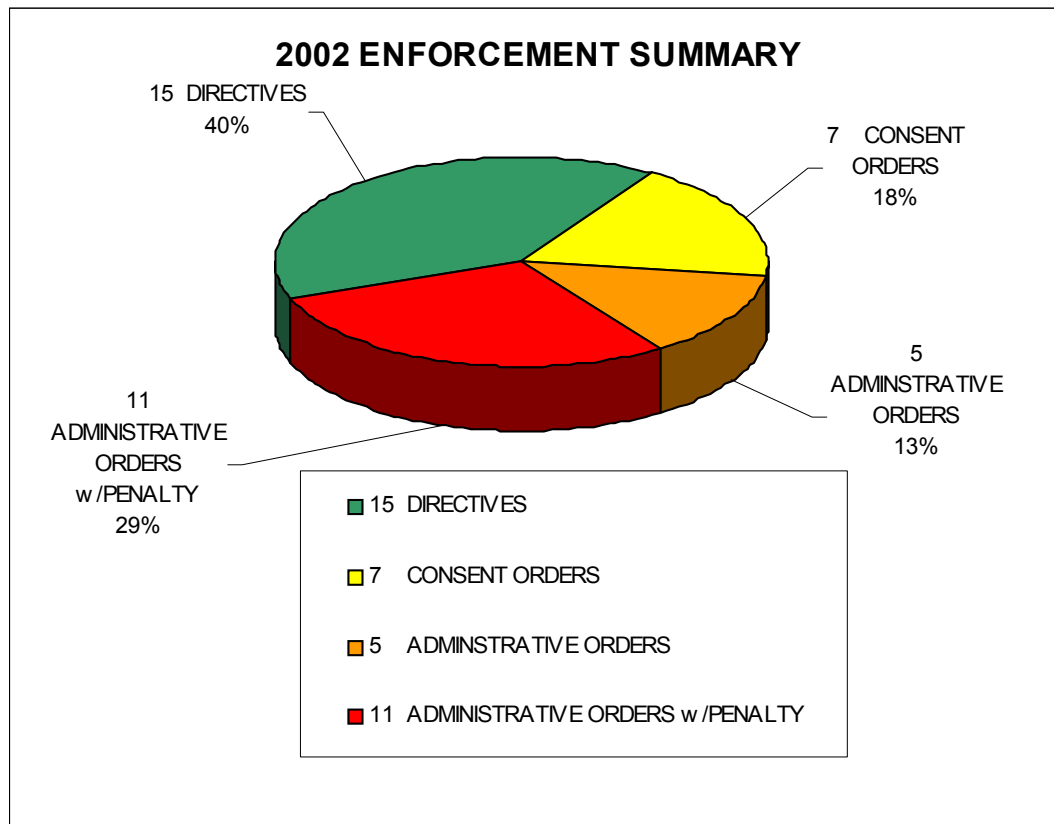
SYSTEM NAME	ACCT #	ISSUED DATE	VIOLATION(S)	CASE #
Almena	A3500	09/18/02	Bact & PN	02-E-0179
Cherokee Co RWD #1	F9610	11/05/02	Pb/Cu	02-E-0097
Country View MHP @ Hays	K5538	05/28/02	Pb/Cu	02-E-0024
Presto Oil	L1210	01/28/02	Bact	02-E-0025

ADMINISTRATIVE ORDERS WITH PENALTY

SYSTEM NAME	ACCT #	ISSUED DATE	VIOLATION(S)	CASE #
Coolidge	F7500	12/10/02	Bact & Total Radium	02-E-0016
Country Store @ Maize	O6819	08/09/02	Bact & PN	02-E-0150
De Dee's I-70	O751H	10/09/02	Bact & Directive	02-E-0232
Easton	G9500	11/07/02	Pb/Cu	02-E-0076
Ellis Co RWD #6	X3010	11/05/02	Pb/Cu, IOC monit, PN	02-E-0096
Jefferson Co RWD #15	J5310	05/08/02	Nitrate & Bact & Pb/Cu	02-E-0018
Pheasant Acres	L6508	05/08/02	Nitrate & Bact	02-E-0026
Rush Co RWD #1	P2011	01/09/03	Pb/Cu, PN & Bact MCL	02-E-0023
Russell Co RWD #1	U4010	09/18/02	Order 97-E-0125 & Bact	02-E-0181
Wallace Co RWD #1	Y1310	05/07/02	Nitrate & Bact	02-E-0019
Toronto	W6500	#####	Bact, Cl monitoring	02-E-0287

A summary of all enforcement actions taken during 2002 is presented in Figure 5.

FIGURE 5.



Current regulations administered by KDHE address the following areas of drinking water contaminants:

- ▶ **TOTAL COLIFORM BACTERIA**
- ▶ **PHASE II/V CHEMICALS**
- ▶ **LEAD AND COPPER**
- ▶ **DISINFECTION BY-PRODUCTS**
- ▶ **SURFACE WATER TREATMENT**
- ▶ **RADIONUCLIDES**

V. TOTAL COLIFORM BACTERIA

Water serves a very important role in maintaining health since it can be a medium for transmitting diseases. For this reason, methods of disinfecting water have been developed. The most common method used today for disinfecting water is chlorination. Chlorination of drinking water has been practiced since the early nineteen hundreds.

Total Coliforms are common in the environment and are generally not harmful themselves. Fecal Coliforms and E. coli are generally not harmful but their presence in drinking water is serious because they usually are associated with sewage or animal waste. The presence of these bacteria in drinking water generally is a result of a problem with water treatment or the pipes which distribute the water, and indicates that the water may be contaminated with organisms that can cause disease (pathogens).

Cryptosporidium is a protozoan associated with the disease cryptosporidiosis in humans. The disease can be transmitted through ingestion of drinking water, person-to-person contact, or other exposure routes. Cryptosporidiosis may cause acute diarrhea, abdominal pain, vomiting, and fever that last 1-2 weeks in healthy adults, but may be chronic or fatal in immunocompromised people.

Giardia lamblia is a protozoan, which can survive in water for 1 to 3 months, associated with the disease giardiasis. Ingestion of this protozoan in contaminated drinking water, exposure from person-to-person contact, and other exposure routes may cause giardiasis. The symptoms of this gastrointestinal disease may persist for weeks or months and include diarrhea, fatigue, and cramps.

In Kansas, water systems are required by state regulation K.A.R. 28-15-19(a) to disinfect all drinking water delivered to the public. To help evaluate the effectiveness of the disinfection method and determine microbiological quality, all systems are required by state regulation K.A.R. 28-15-14 to submit monthly water samples for coliform bacteria testing. Total coliform testing is used as an indicator of the possible presence of other bacteriological contaminants. Systems can choose to have this bacteriological testing of their water performed by KDHE's microbiology laboratory or a state certified private laboratory.

A summary of the results of approximately 37,700 water samples collected and analyzed for coliform bacteria in the state laboratory during 2002 is presented in Table 4.

TABLE 4.

SUMMARY OF BACTERIOLOGICAL MONITORING RESULTS -2002

QUARTER COLLECTED	NEGATIVE SAMPLES	COLIFORM POSITIVE	FECAL POSITIVE	INVALID SAMPLES	TOTAL QUARTERLY TOTALS
First Quarter Samples:	9063	24	5	197	9289
Second Quarter Samples:	9024	70	22	246	9362
Third Quarter Samples:	9511	104	23	274	9912
Fourth Quarter Samples:	8813	53	11	251	9128
Total Samples for 2002:	36,411	251	61	968	37,691

Key: QUARTER = Three month period; four quarterly periods in one year.
NEGATIVE = Samples with no coliform bacteria present.
COLIFORM POSITIVE= Samples with coliform bacteria present. (does not include fecal coliform)
FECAL POSITIVE= Samples with fecal coliform bacteria present.
INVALID = Samples not analyzed (too old, excessive chlorine, insufficient sample volume, empty, lost in mail, excess growth).

COMPLIANCE AND ENFORCEMENT

Water systems that failed to collect one or more required samples within the monthly compliance period were assessed a *routine monitoring violation*. When a water sample tests positive for coliform bacteria, water systems are required to collect three repeat samples (also called check samples). If the water system failed to collect one or more of these repeat (check) samples, the system was then assessed a *repeat monitoring violation*. Monitoring violations results in the system being required to issue public notification.

The system could have incurred a **maximum contaminant level (MCL)** violation if a number of water samples tested positive for total coliform, or the system could have incurred a more serious acute MCL violation if fecal coliform or E. coli were found in one or more of the total coliform positive samples. In both cases, the systems are required to notify the public of the violations by publication, direct mail and/or hand delivery. For acute MCL violations, systems are required to provide notices to radio and television stations and contact KDHE within 24 hours of learning of the violation.

A summary of all monitoring and MCL violations during 2002 is presented in Table 5.

TABLE 5.

**SUMMARY OF MONITORING VIOLATIONS AND
COLIFORM MCL VIOLATIONS IN 2002**

TYPE OF VIOLATION	TOTAL # OF VIOLATIONS	# OF SYSTEMS IN VIOLATION	% OF SYSTEMS IN VIOLATION	% OF SYSTEMS IN COMPLIANCE
Monitoring - Major & Min (Routine & Repeat)	223	167	15%	85%
Non-Acute Coliform MCL	42	40	4%	96%
Acute Coliform MCL	7	7	1%	99%

A total of 223 bacteriological monitoring violations occurred during 2002. These 223 monitoring violations were incurred by 167 water systems.

A total of 47 water systems had Total Coliform MCL violations because water samples tested positive for coliform and/or fecal coliform bacteria. These 47 water systems, received a total of 49 acute and non-acute MCL violations. The names of systems that incurred a monitoring or MCL violation are listed in Appendix B.

Non-Acute MCL:

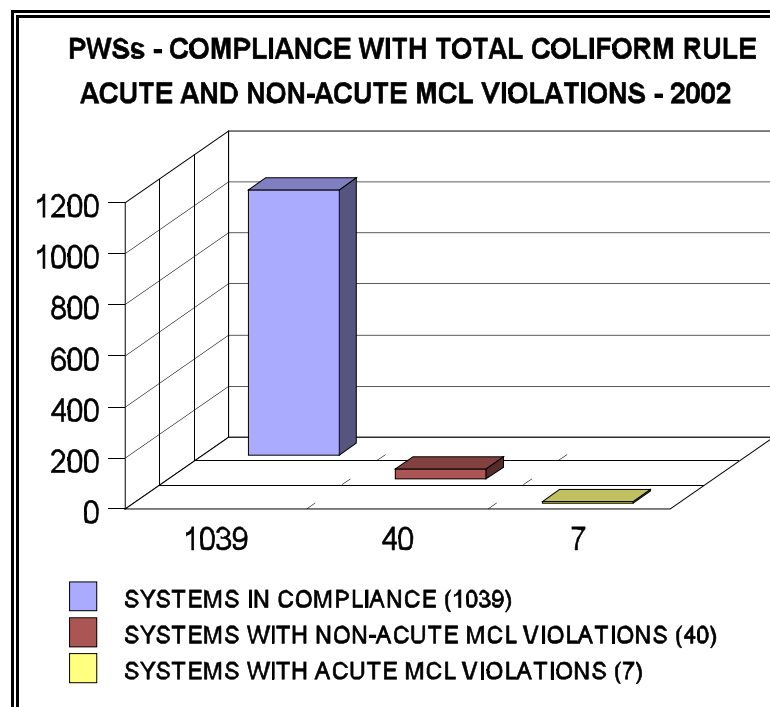
The standard is that no more than one sample per month (no more than 5% of samples for systems doing over 40 samples a month) may contain coliform.

Acute MCL:

When total coliforms are present in any sample, that sample is also analyzed for fecal coliform or E. coli. Any fecal coliform positive repeat sample or E. coli positive repeat sample, or any total coliform positive repeat sample following a fecal coliform positive or E coli positive routine sample is an acute coliform violation.

Figure 6 shows a comparison between the water systems that incurred acute and non-acute MCL violations and those in compliance during 2002. Note that the same seven systems that had an acute MCL violation also had a non-acute total coliform violation the same month..

FIGURE 6.



*same 7 systems that had acute MCL violations also had non-acute total coliform violation.

During 2002, KDHE issued the following Directives for bacteriological monitoring violations:

- 1) De-Dee's I-70 at Manhattan
- 2) City of Elgin
- 3) ENT, Inc. (De-Dee's #5 - Abilene)
- 4) Thunderbird Marina - Junction City
- 5) Wester Acres - Hutchinson

Consent Orders were issued to:

- 1) Country Store, Inc. - Maize
- 2) Pheasant Acres Country Living - Hutchinson

Administrative Orders with Penalties were issued to:

- 1) Country Store, Inc. - Maize (upgraded to \$1,125.00 fine - being appealed)
- 2) De-Dee's I-70 - Manhattan (upgraded to \$3,910.00 fine)
- 3) Jefferson Co. RWD#15 - Grantville - \$1,500.00 fine paid
- 4) Pheasant Acres Country Living - Hutchinson (upgraded to \$2,000.00 fine - being appealed).
- 5) Russell Co. RWD#1 - \$7,750.00 fine - being appealed
- 6) Wallace Co. RWD#1 - \$2,500.00 fine paid

VI. PHASE II/V CHEMICAL RULES

The Phase II/V Chemical Rule establishes **maximum contaminant levels (MCL)** and **treatment techniques** for various contaminants affecting drinking water, such as solvents, pesticides and herbicides, and heavy metals.

Kansas has adopted these federal drinking water regulations in the **Kansas Administrative Regulations (K.A.R.)**. All the contaminants regulated by this rule may be harmful to human health at certain concentrations and many are toxic and/or carcinogenic.

The Phase II/V rules contain five groups of contaminants:

- ◆ **ASBESTOS**
- ◆ **NITRATE/NITRITE**
- ◆ **INORGANIC CHEMICALS (IOC)**
- ◆ **VOLATILE ORGANIC COMPOUNDS (VOC)**
- ◆ **SYNTHETIC ORGANIC COMPOUNDS (SOC)**

The Phase II/V Rules apply to all community water systems and non-transient non-community water systems. The nitrate/nitrite section of this regulation also applies to transient non-community water systems. Water systems that purchase all their water from other systems are not required to monitor for these contaminants.

Water systems are required to monitor for contaminants under a standardized monitoring schedule consisting of three compliance periods of three years each. During these compliance periods, water systems are required to perform specific monitoring depending on the population served and whether they use surface or groundwater. The first three-year compliance period began January 1, 1993 and ended December 31, 1995. The second compliance period began January 1, 1996 and ended on December 31, 1998. The third compliance period began January 1, 1999 and ended on December 31, 2001, this completed the first compliance cycle of nine years. The first three-year compliance period of the second nine years compliance period began January 1, 2002 and will end on December 31, 2004.

Water systems using surface water are required to monitor more frequently than those using groundwater because surface water is more susceptible to contamination. Water systems with populations greater than 3,300 are also required to monitor more frequently than small systems with populations of 3,300 or less. The monitoring data presented in this report is for calendar year 2002, is the first year of the first monitoring period in the second compliance period.

With the exception of asbestos, this regulation specifies that all the water samples must be collected at the **point of entry (POE)**. The POE is defined as a point after raw water has been treated (disinfected) and before it enters the distribution system.

Water systems are out of compliance with this rule by either failing to monitor or having an MCL violation. These violations require the system to issue public notice by notifying all their consumers of the violation using newspaper, television, radio, mail, and/or posted notices.

VI(a). Asbestos

Asbestos is a naturally occurring mineral found in the earth's crust in a fibrous form. Inhalation of asbestos fibers has been shown to produce lung tumors in humans. Ingestion of asbestos fibers greater than 10 micrometers in length has been shown to cause benign tumors in laboratory rats. To reduce the potential risk of cancer or other adverse health effects that have been observed in laboratory animals, EPA has set the drinking water standard for asbestos at 7 million fibers per liter (fibers longer than 10 micrometers).

Asbestos generally enters drinking water either from contact with natural mineral deposits or asbestos-cement pipes used in water distribution systems. Geologically, Kansas does not have any naturally occurring asbestos. Therefore, KDHE waived source water asbestos monitoring for all water systems. However, water systems that utilize asbestos-cement pipes in their distribution system were required to test for asbestos. To identify systems having asbestos-cement pipes in 1993, KDHE conducted a survey of all water systems. The results of this survey yielded 208 water systems having asbestos-cement pipe. These systems were required to monitor for asbestos in their distribution systems, before the end of the first compliance period (December 31, 1995).

ASBESTOS MONITORING RESULTS

All analyses for asbestos were performed by private certified laboratories during 1993 through 1995. Of the 208 water systems required to monitor for asbestos, 207 systems tested below 0.2 **million fibers per liter (MFL)** detection limit. Only one system had a concentration of asbestos greater than the MCL of 7 MFL. This system was required to perform public notice and monitor quarterly for asbestos during 1995. The results of this quarterly monitoring were consistently below the MCL. An investigation of the system determined the cause of the earlier asbestos MCL exceedance was due to a pigging operation (cleaning inside of pipes) involving asbestos cement pipes in the distribution system prior to the initial monitoring. Follow up monitoring indicated the system returned to compliance.

No monitoring of asbestos was required or done by any water system during 2002. K.A.R. 28-15-14(c)(3) states "a condition of the waiver shall be a requirement that a system takes a minimum of one sample while the waiver is effective. The term during which the waiver is effective shall not exceed one compliance cycle (9 years).

VI(b). Nitrate/Nitrite

Many drinking water contaminants, such as nitrate and nitrite are found naturally occurring in the environment. Nitrogen may find its way into the groundwater from decaying plant and animal matter, precipitation, and urban runoff. Fertilization of agricultural and urban land with ammonium nitrate, and runoff from livestock operations are also a significant source of nitrate contamination of groundwater.

Excessive amounts of nitrate and nitrite can cause methemoglobinemia in infants, also known as “blue-baby syndrome.” To safeguard infants from this condition, Kansas regulations (K.A.R. 28-15-13(b)) set the MCL for community water systems at 10 **milligrams per liter (mg/l)** for nitrate and 1 mg/l for nitrite as the maximum allowable concentration in public drinking water supplies. Kansas regulations (K.A.R. 28-15-14(b)) require water systems with their own sources of water to monitor all their **points of entry (POE)** at least once a year for nitrate. Water systems that exclusively use purchased water from other systems are exempt from this monitoring. The MCL for non-community water systems is set at 20 milligrams per liter (mg/l).

Boiling the water will only concentrate nitrates in drinking water, and should not be attempted. Alternate source of drinking water should be provided for all infants less than six months of age, mothers nursing infants less than six months of age, and pregnant women.

The drinking water provided must meet the requirements of K.A.R. 28-15-13. If bottled water is chosen to meet this requirement, the water system shall obtain a certification from the bottled water supplier that the bottled water meets the appropriate requirements of the U.S. Food and Drug Administration concerning the source of the water and monitoring of water quality.

NITRATE MONITORING RESULTS

During 2002, 770 water systems were required to monitor from 1,128 POEs for nitrate. Twenty-six community water systems had analytical results greater than the nitrate MCL of 10 mg/l. The minimum concentration was below the detection limit and the maximum concentration reported was 24 mg/l,

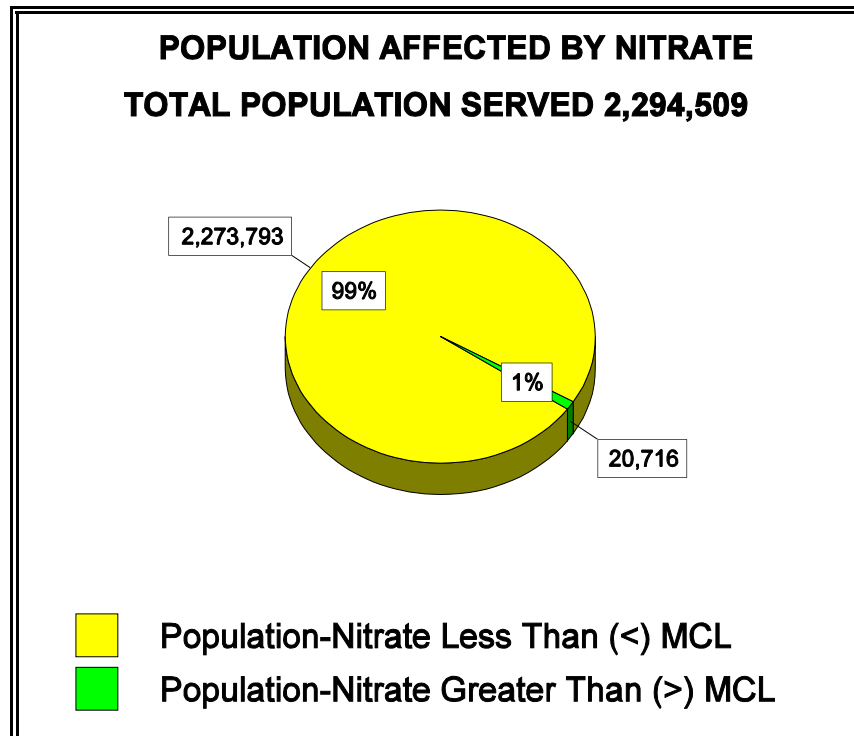
Five non-community water systems had analytical results greater than 10 mg/l, but below the allowable 20 mg/l, except for IBP at Holcomb. IBP exceeded the allowable MCL two quarters during 2002 and KDHE increased the monitoring schedule to monthly monitoring until the public water system is reliably and consistently below the MCL.

The water system with the largest population affected by nitrate MCL violations was the city of Scott City with a population of 3,855. The city of Scott City has 8 wells and 6 POEs, but only 1 POE exceeded the nitrate MCL. The names of systems that incurred a Nitrate monitoring or MCL violation are listed in Appendix B.

The total population served by all water systems monitoring for nitrate was 2,294,509. The total population of water systems with no POE monitoring results exceeding the nitrate MCL was 2,273,793. The total population of water systems with a POE monitoring result exceeding the MCL was 20,716, which equals less than one percent of the total population.

Figure 7 shows the population affected by nitrate MCL violations in comparison with the population of water systems in compliance.

FIGURE 7.



COMPLIANCE AND ENFORCEMENT

Water systems with nitrate monitoring results above the MCL or failing to monitor were required to do public notice and provide proof to KDHE that public notice was performed. The Public Notification Rule was revised on May 6, 2002. All water systems with nitrate violations performed the required public notice. Water systems with MCL violations were also required to monitor for nitrate at least quarterly until they are reliably and consistently below the MCL.

During 2002, KDHE issued Nitrate Consent Orders for:

- 1) City of Greenleaf
- 2) Pheasant Acres Country Living - Hutchinson

Administrative Orders with Penalty were issued to:

- 1) Ellis Co. RWD#6 - \$1,882.50 - being appealed
- 2) Jefferson Co. RWD#15 - \$1,500.00 paid fine
- 3) Pheasant Acres - enforcement action upgraded to \$2,000.00 - being appealed
- 4) Wallace Co. RWD#1 - \$2,500.00 fine paid

Other water systems that are operating under Consent Orders are currently looking for new sources of water that meet all MCL requirements for drinking water.

VI(c). Inorganic Chemicals

Kansas regulations (K.A.R. 28-15-13(b)) set MCLs for nine metals and two non-metal contaminants. Table 5, on the following page lists these IOC contaminants and their MCLs in **milligrams per liter (mg/l)**. Most of these IOCs occur naturally in the environment and are soluble in water. Because of this, they are potential contaminants of drinking water. Not all IOCs originate from natural mineral deposits. Industrial activities such as metal finishing, textile manufacturing, mining operations, electroplating, manufacturing of fertilizers, paints, and glass can also generate these contaminants.

Inorganic contaminants can be toxic to humans at certain levels. Cadmium, chromium, and selenium can cause damage to the kidneys, liver and nervous and circulatory systems. Barium has been associated with high blood pressure and mercury has been shown to damage kidneys. Antimony, beryllium, cyanide, nickel and thallium have been shown to damage the brain, lungs, kidneys, heart, spleen and liver.

IOCs can be removed from drinking water using various available technologies such as coagulation/filtration, lime softening, reverse osmosis, ion exchange, oxidation, activated alumina, and granular activated carbon.

TABLE 6.

REGULATED INORGANIC CHEMICALS (IOC)

<u>Chemical Name</u>	<u>Maximum Contaminant Level (MCL)</u>
<i>Antimony</i>	<i>0.006 mg/l</i>
<i>Arsenic</i>	<i>0.05 mg/l</i>
<i>Barium</i>	<i>2 mg/l</i>
<i>Beryllium</i>	<i>0.004 mg/l</i>
<i>Cadmium</i>	<i>0.005 mg/l</i>
<i>Chromium</i>	<i>0.1 mg/l</i>

<i>Cyanide</i>	0.2	mg/l
<i>Fluoride</i>	4	mg/l
<i>Mercury</i>	0.002	mg/l
<i>Selenium</i>	0.05	mg/l
<i>Thallium</i>	0.002	mg/l

IOC MONITORING FREQUENCY

All community and non-transient non-community water systems are required to monitor each **point of entry (POE)** for IOCs. Water systems using groundwater as their sole source must monitor at least once during every three year compliance period. Systems using surface water as a source must monitor for IOCs at least once a year. Systems exclusively purchasing treated water as their source are exempt from this monitoring.

Water systems incurring a MCL violation are required to increase their monitoring to at least quarterly. Water systems having a MCL or monitoring violation are required to notify their customers of such violations by issuing a public notice.

IOC MONITORING RESULTS

During 2002, 320 water systems monitored for IOCs. Selenium was the only inorganic chemical detected above the MCL. Three water systems incurred 6 selenium MCL violations. These three systems had high levels of selenium detected since 1995, and were monitoring quarterly for selenium during 2002. The city of Logan has drilled a new POE, and combined all their wells. No selenium violations have occurred since the combination of wells.

The three water systems in violation of the selenium MCL represent less than one percent of the total systems in Kansas, resulting in a compliance rate greater than 99 percent. The total population affected by these selenium MCL violations was 786. The average population of water systems with a selenium MCL violation was 262.

All other IOC results were at or below MCLs. The names of systems that incurred an IOC monitoring violation or selenium MCL violation are listed in Appendix B.

VI(d) Volatile Organic Compounds

Volatile organic compounds (VOC) are commonly referred to as organic solvents. These compounds are constituents of many degreasers, industrial cleaners, spot/stain removers, paint thinners, in some paints, varnishes and lacquers, in many paint removers/strippers, in many pesticides/herbicides, in most dry cleaning chemicals, in many printing inks and printing press chemicals, in most petroleum products including many types of fuels. Most of these compounds are flammable and toxic to varying degrees. Because of these characteristics, they are also a potential source of environmental pollution and pose a health hazard when present in drinking water.

Kansas has established regulations governing VOCs in drinking water. These regulations, K.A.R. 28-15-14, specify when a water systems must monitor their POE for VOC contaminants. Large water systems, serving populations of more than 3,300 people, are required to sample each POE at least annually. Small water systems serving populations of 3,300 or less are required to sample each POE at least once during the three year compliance period. If any contaminants are detected during this regular monitoring additional monitoring is required.

Table 7 shows a list of the regulated volatile organic compounds tested by KDHE.

TABLE 7.

REGULATED VOLATILE ORGANIC COMPOUNDS (VOC)

Compound Name	MCL	Uses
<i>Benzene</i>	0.005 mg/l	<i>fuels, pesticides, paints, pharmaceutical</i>
<i>Carbon tetrachloride</i>	0.005 mg/l	<i>degreasing agents, fumigants</i>
<i>Chlorobenzene</i>	0.1 mg/l	<i>industrial solvents, pesticides</i>
<i>cis-1,2 Dichloroethylene</i>	0.07 mg/l	<i>industrial solvents, chemical manufacturing</i>
<i>Dichloromethane</i>	0.005 mg/l	<i>paint strippers, refrigerants, fumigants</i>
<i>Ethylbenzene</i>	0.7 mg/l	<i>gasoline, insecticides</i>
<i>o-Dichlorobenzene</i>	0.6 mg/l	<i>insecticides, industrial solvents</i>
<i>p-Dichlorobenzene</i>	0.075 mg/l	<i>insecticides, moth balls</i>
<i>Styrene</i>	0.1 mg/l	<i>plastics, synthetic rubber, resins</i>
<i>Tetrachloroethylene</i>	0.005 mg/l	<i>dry cleaning/industrial solvents</i>
<i>trans-1,2 Dichloroethylene</i>	0.1 mg/l	<i>industrial solvents, chemical manufacturing</i>
<i>Trichloroethylene</i>	0.005 mg/l	<i>paint strippers, dry cleaning, degreasers</i>
<i>Vinyl chloride</i>	0.002 mg/l	<i>plastics/synthetic rubber, solvents</i>
<i>Xylenes</i>	10 mg/l	<i>paints/inks, solvents, synthetic fibers, dyes</i>
<i>1,1 Dichloroethylene</i>	0.007 mg/l	<i>paints, dyes, plastics</i>
<i>1,1,1 Trichloroethane</i>	0.2 mg/l	<i>metal cleaning/degreasing agent</i>
<i>1,1,2 Trichloroethane</i>	0.005 mg/l	<i>industrial degreasing solvents</i>
<i>1,2 Dichloroethane</i>	0.005 mg/l	<i>gasoline, insecticides</i>
<i>1,2 Dichloropropane</i>	0.005 mg/l	<i>soil fumigants, industrial solvents</i>
<i>1,2,4 Trichlorobenzene</i>	0.07 mg/l	<i>industrial solvents</i>

VOC MONITORING RESULTS

222 water systems monitored 412 POEs during 2002.

VOC monitoring during 2002, concluded with no water systems having any water samples test greater than the MCL for any VOC. No water system incurred a VOC monitoring violation during 2002.

VI(e) Synthetic Organic Compounds

Synthetic organic compounds (SOC) are man-made compounds, many of which are chlorinated and used as herbicides, pesticides, fungicides and insecticides. Kansas regulation, K.A.R. 28-15-14, requires water systems to monitor their drinking water for 33 SOC's. MCLs for each of these SOC contaminants is set by Kansas regulation, K.A.R. 28-15-13.

Water systems failing to monitor or incurring an MCL violation for any of the compounds listed in Table 8 must notify the public of such violation and provide proof of performing such public notice to KDHE.

Table 8 shows a list of the regulated synthetic organic compounds tested by KDHE.

TABLE 8.

REGULATED SYNTHETIC ORGANIC COMPOUNDS (SOC)

Compound Name	MCL	Uses
<i>Alachlor (Lasso)</i>	0.002 mg/l	herbicide
<i>Aldicarb</i>	0.003 mg/l	insecticide
<i>Aldicarb sulfoxide</i>	0.003 mg/l	insecticide
<i>Aldicarb sulfone</i>	0.003 mg/l	insecticide
<i>Atrazine (Atranex, Crisazina)</i>	0.003 mg/l	herbicide
<i>Benzo(a)pyrene</i>	0.0002 mg/l	coal tar lining & sealants
<i>Carbofuran (Furadan 4F)</i>	0.04 mg/l	rootworm, weevil control
<i>Chlordane</i>	0.002 mg/l	termite control
<i>Dalapon</i>	0.2 mg/l	herbicide
<i>Dibromochloropropane(DBCP, Nemaflume)</i>	0.0002 mg/l	pesticide, nematocide, soil fumigant
<i>2,4-D (2,4-dichlorophenoxyacetic acid)</i>	0.07 mg/l	herbicide, defoliant
<i>2,4,5-TP (Silvex)</i>	0.05 mg/l	herbicide, defoliant
<i>Di(diethylhexyl)adipate</i>	0.4 mg/l	plasticizer
<i>Di(diethylhexyl)phthalate</i>	0.006 mg/l	plasticizer
<i>Dinoseb (2,4-dinitro-6-sec-butylphenol)</i>	0.007 mg/l	insecticide, herbicide
<i>Diquat</i>	0.02 mg/l	herbicide
<i>Endothall</i>	0.1 mg/l	herbicide, defoliant
<i>Endrin</i>	0.002 mg/l	insecticide
<i>Ethylene Dibromide (EDB, Bromofume)</i>	0.0005 mg/l	gasoline additive, fumigants, & solvents
<i>Glyphosate</i>	0.7 mg/l	herbicide
<i>Heptachlor (H-34, Heptox)</i>	0.0004 mg/l	termite control
<i>Heptachlor epoxide</i>	0.0002 mg/l	insecticide
<i>Hexachlorobenzene</i>	0.001 mg/l	by-product of solvents & pesticides
<i>Hexachlorocyclopentadiene</i>	0.05 mg/l	pesticide, fungicide
<i>Lindane</i>	0.0002 mg/l	pesticide
<i>Methoxychlor (DMDT, Marlath)</i>	0.04 mg/l	insecticide
<i>Oxamyl (Vydate)</i>	0.2 mg/l	insecticide
<i>Pentachlorophenol (PCP)</i>	0.001 mg/l	herbicide, fungicide, wood preservative
<i>Picloram (Tordon)</i>	0.5 mg/l	herbicide, defoliant
<i>Polychlorinated Biphenyls (PCB, Aroclors)</i>	0.0005 mg/l	herbicide
<i>Simazine</i>	0.004 mg/l	herbicide
<i>2,3,7,8 TCDD (Dioxin)</i>	3x10 ⁻⁸ mg/l	pesticide byproduct
<i>Toxaphene</i>	0.003 mg/l	pesticide

MONITORING FREQUENCY

During the first compliance period of 1993 through 1995, all required water systems performed monitoring for all SOC's listed in Table 7 above, with the exception of the chemicals previously waived. **Atrazine** and **ethylene dibromide (EDB)** were the only contaminants in the SOC group that were detected over their MCL during this first compliance period.

Based on these monitoring results, KDHE with EPA approval, allowed water systems to only monitor for atrazine and EDB during the subsequent compliance period of 1996 through 1998. Other than atrazine, a widely use herbicide, no other contaminants were detected by themselves. Alachlor, the only other pesticide detected, always appeared in conjunction with atrazine.

Water systems utilizing groundwater are required to monitor each POE at least once during the three year compliance period (2002-2004). Small systems (population \leq 3,300) utilizing surface water are required to monitor their POE a minimum of one quarter during the three year compliance period; collecting the water sample during the months of May or June. Large surface water systems (population $>$ 3,300) are required to monitor their POE at least annually during the months of May or June.

Water systems using groundwater, that had no SOC's detected during the first compliance period (1993-95), tested for atrazine during 1996 through 1998, using an immunoassay method (EPA Method 4670). This immunoassay method was used because it is highly sensitive in detecting any contaminant in the triazine chemical family and is one fourth the cost of the regular drinking water method (EPA Method 507).

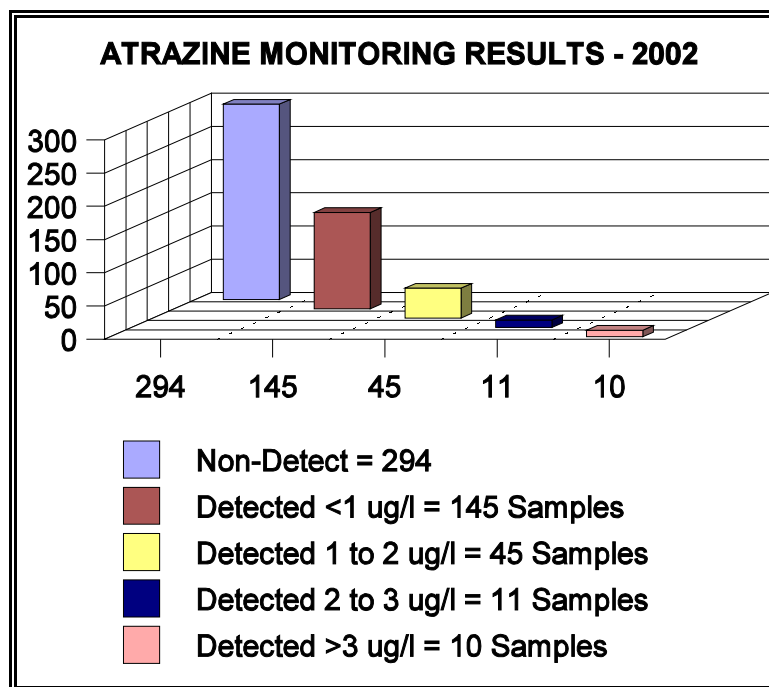
Groundwater systems with previous SOC detects and all surface water systems were required to perform the regular atrazine testing using EPA Method 507. This Method also detects alachlor, the only other pesticide detected during the previous compliance period.

SOC MONITORING RESULTS

A total of 229 water systems collected water samples from 914 POEs for atrazine testing during 2002. None of these water systems exceeded the MCL of 3.0 **micrograms per liter ($\mu\text{g/l}$)** (yearly running average).

Of the 914 POE water samples collected during 2002, 294 samples or 32% percent showed atrazine detected, 145 detected atrazine at concentrations below 1.0 $\mu\text{g/l}$, 45 at concentrations between 1.0 and 2.0 $\mu\text{g/l}$, 11 at concentrations between 2.0 and 3.0 $\mu\text{g/l}$, and 10 were greater than the MCL of 3.0 $\mu\text{g/l}$. See Figure 8.

FIGURE 8.



VII. UNREGULATED CONTAMINANTS

The 1996 SDWA Amendments require EPA to mandate monitoring for unregulated contaminants (UCMR) of all community public water supply systems and non-transient, non-community water systems serving over 10,000 people, and randomly selected small water supply systems. The unregulated contaminant monitoring information will be used to develop a database to help guide EPA's efforts to select drinking water contaminants for future regulation. Effective January 1, 2001, there are three levels of monitoring, involving different numbers of systems and different contaminant lists. All water systems must all use an EPA designated laboratory following UCMR quality control specifications. The three levels are: (1) Assessment monitoring for List 1 contaminants-must be done within the three years of 2001 through 2003. (2) Screening Survey for List 2 contaminants, and (3) Pre-Screen Testing, which is only required for a small subset of systems that are most vulnerable to List 3 contaminants.

The small systems selected in Kansas are:

- 1) City of Olmitz
- 2) City of Park City
- 3) City of Wellington
- 4) Nemaha Co. RWD#3

The unregulated contaminant monitoring information will be used to develop a database to help guide EPA's efforts to select drinking water contaminants for future regulation. Surface water systems must monitor 4 consecutive quarters, and ground water systems must monitor twice, approximately six months apart for List 2 chemical contaminants. One of these quarterly or semi-annual sampling events must occur in the most vulnerable period of May through July, to ensure monitoring of seasonally elevated contaminant concentrations. Below are the three UCMR lists.

List I - Assessment Monitoring

Contaminant
2,4-dinitrotoluene
2,6-dinitrotoluene
Acetochlor
DCPA mono-acid degradate* DCPA di-acid degradate*
4,4-DDE
EPTC
MTBE
Molinate
Nitrobenzene
Perchlorate
Terbacil

* DCPA degradates are not separately determined by these methods, therefore, they will be reported as the sum of both degradates.

List 2 - Screening Survey

Contaminant
1,2-diphenylhydrazine
2,4,6-trichlorophenol
2,4-dichlorophenol
2,4-dinitrophenol
2-methyl-phenol
Alachlor ESA and degradation byproducts of acetanilide pesticides
Diazinon
Disulfoton
Diuron
Fonofos
Linuron
Nitrobenzene
Prometon
RDX
Terbufos
Aeromonas

* Candidate for a 3rd Screening Survey, if conducted

List 3 - Prescreen Testing

Contaminant
Lead-210
Polonium-210
Adenoviruses
Cyanobacteria(blue-green algae), other fresh water algae, and their toxins
Caliciviruses
Coxsackieviruses
Echoviruses
Helicobacter pylori
Microsporidia

Results must be reported to the public under Consumer Confidence Rule (CCR) and Public Notification requirements. During 2002, city of Olmitz, city of Park City, city of Wellington and Nemaha Co. RWD#3 were all non-detect.

VIII. LEAD AND COPPER

High exposure to metals has long been recognized as a cause of adverse health effects in humans. Lead has been singled out because of its possible appearance in drinking water and its high toxicity to humans. Copper, although an essential nutrient, also poses a health threat at elevated levels. Young children are especially susceptible to the toxic effects of these metals.

Lead and copper found in water pipes and in old plumbing solder can leach into the drinking water. Besides leaching from water pipes and solder, lead and copper can also leach from brass water faucet fixtures. As a step to reduce lead in drinking water, regulations prohibit the use of lead water pipes and lead plumbing solder.

KDHE regulations govern lead and copper in drinking water and can be found at K.A.R. 28-15-22. These regulations apply to all community water systems and non-transient non-community water systems. These water systems are required to monitor for lead and copper on a scheduled basis. If monitoring results indicate unacceptable levels of lead or copper, the water system is required to initiate corrosion control treatment techniques to minimize lead and/or copper contamination. Action levels set by this regulation are 0.015 milligrams per liter (mg/l) (15 micrograms per liter ($\mu\text{g/l}$)) for lead and 1.3 mg/l (1,300 $\mu\text{g/l}$) for copper.

LEAD AND COPPER MONITORING RESULTS

Four hundred and sixty one public water systems were scheduled to monitor for lead and copper during 2002. Ten systems incurred monitoring violations by failing to perform their required routine and follow-up tap sampling. These ten water systems were required to complete public notification.

Seven systems exceeded the copper action level, four systems exceeded the lead action level, and two additional systems exceeded both the lead and copper action level. All thirteen systems were required to implement corrosion control treatment or modify existing treatment. One system failed to submit the required treatment recommendation, and two systems failed to provide proof of public education. Notices of violation were sent to both systems requiring them to complete public notice.

These lead and copper violations translate to a 74% compliance rate for monitoring and a 97% compliance rate for treatment installation and public education. The names of the systems which incurred violations of this regulation during 2002 are listed in Appendix B.

IX. DISINFECTION BY-PRODUCTS

To ensure drinking water is safe and pathogen free it must be disinfected. The most commonly used method of disinfection is chlorination. Unfortunately, the chlorine added to water to kill harmful microorganisms also combines with organic matter naturally present in water to form chemical compounds called **trihalomethanes** or **THMs**. These THMs are suspected of being carcinogens, which has been suggested of causing bladder cancer and reproductive effects in humans.

Beginning January 1, 2002, Stage 1 Disinfection By-Product Rule (DBPR) was updated to improve quality of drinking water and increase protection to public health. This affects all surface water systems and ground water systems under the direct influence of surface water serving 10,000 or more people. The MCL for total trihalomethanes (TTHM) has been lowered to 80 parts per billion (ppb) and haloacetic acids (HAA5) MCL is 60 ppb.

In addition, the Stage 1 DBPR requires conventional filtration systems to remove specific percentages of organic materials measured as total organic compound (TOC) that may react with disinfectants to form DBPs.

Table 9 shows the contaminants DBPR must monitor in drinking water.

TABLE 9.
STAGE 1 DBPR

Disinfection By-Product	MCLG (mg/l)	(MCL (mg/l)
Total Trihalomethanes (TTHM)	N/A	0.080
Chloroform	N/A	N/A
Bromodichloromethane	zero	N/A
Bromoform	zero	N/A
Dibromochloromethane	0.06	N/A
Five Haloacetic Acids (HAA5)	N/A	0.060
Monochloroacetic Acid	N/A	N/A
Dichloroacetic Acid	zero	N/A
Trichloroacetic Acid	0.3	N/A
Monobromoacetic Acid	N/A	N/A
Dibromoacetic Acid	N/A	N/A
Chlorite	0.8	1.0
Bromate	zero	0.010

MONITORING RESULTS FOR THMs

Eighteen water systems were required to monitor for THMs during 2002. Most large water systems in Kansas are surface water systems. Surface water generally has more suspended and dissolved organic material than groundwater. Two water systems received 2 MCL violations during 2002. A 91 percent compliance rate was achieved for this regulation during 2002. The names of the systems which incurred violations of this regulation during 2002 are listed in Appendix B.

X. SURFACE WATER TREATMENT

Almost one third (378) of all water systems in Kansas use surface water for part or all of their drinking water. This includes systems that purchase their water. These water systems provide drinking water to about two thirds of the Kansas population. Water for these systems originates from rivers or man-made reservoirs located throughout the state.

Unlike most groundwater that is protected by the earth's crust, surface water is exposed to the atmosphere and surface runoff. This exposure makes surface water more vulnerable to contamination than most groundwater. For this reason, a regulation has been developed specifically for surface water and groundwater under the influence of surface water, such as springs and shallow wells which are susceptible to surface contamination.

Kansas regulation (K.A.R. 28-15-21), address as specific treatment requirements for surface water. This regulation requires that surface water systems, "provide filtration and disinfection treatment of source water. This regulation is known as the **surface water treatment rule** or **SWTR**.

This regulation requires water systems to filter the water, and keep a record of turbidity readings of the treated water entering the distribution system. High turbidity levels adversely affect the efficiency of the disinfection process, contribute to the undesirable formation of **trihalomethanes (THMs)**, and indicate viruses or Giardia Lamblia may be present. For these reasons turbidity limits are set depending on the type of filtration used.

The maximum allowable for any single finished water turbidity reading is 5.0 **nephelometric turbidity units (NTU)**. Additionally, for a system to be in compliance, at least 95 percent of the filtered water samples during a month must have turbidity levels less than or equal to 0.5 NTU.

These regulations also require that the filtering process in conjunction with the disinfection treatment remove or inactivate 99.99 percent of viruses and 99.9 percent of Giardia Lamblia cysts. The presence of viruses in drinking water can cause stomach cramps and/or gastroenteritis (intestinal distress). The chlorine (disinfectant) concentration in the water entering the distribution system is required to be at least 0.2 mg/l of free chlorine or 1.0 mg/l of combined chlorine. Chlorine residual readings must be taken daily at set intervals and recorded by the water operator. Turbidity and disinfection records are required to be submitted to KDHE on a monthly basis for compliance determination.

SURFACE WATER MONITORING RESULTS

There were a total of 109 systems monitoring for compliance (including systems using groundwater under the influence of surface water, surface water and a combination of ground and surface waters) under the SWTR regulations. During 2002, 10 water systems incurred 18 violations of the surface water treatment technique regulation. Eight water systems incurred 12 monitoring, or routine/repeat violations.

These water systems had a monitoring compliance rate of 91 percent and a treatment technique compliance rate of 93 percent. Eighteen systems performed public notification as required of such violations to their customers. The names of the systems which incurred violations of this regulation during 2002 are listed in Appendix B.

XI. RADIONUCLIDES

Most radiation occurs naturally and is readily present in the environment. Radiation in groundwater commonly occurs when water comes in contact with the natural decay of uranium in rocks and soils. In most circumstances, this radiation occurs at such low levels it is harmless to human health. The purpose of the radionuclides rule is to reduce the exposure to radionuclides in drinking water, and therefore, reduce the risk of cancer, and toxic kidney effects from uranium. This rule will also improve public health protection by reducing exposure to all radionuclides.

Occasionally, in some areas of the state, these radiation levels occur at higher levels which may present a risk to human health. For this reason, regulations which have been adopted require communities water systems to monitor their drinking water for radionuclides. Only community water systems are required to monitor their drinking water for radionuclides.

EPA has revised the current radionuclides regulation and set a standard for uranium 30 ug/L. Water systems with monitoring results greater than the MCL will be required to monitor quarterly until four consecutive quarters are below the MCL. These water systems will also be required to issue a public notice informing their customers of the MCL violation. Prior to 2002, there was no standard for uranium, but monitoring started in 1984. The rule retains the existing MCLs for combined radium 226 and radium 228, gross alpha particle radioactivity, and beta particle and photon activity. The rule regulates uranium for the first time.

Table 10 lists the radiological contaminants along with their common sources, and the corresponding MCLs as set by Kansas regulations (K.A.R. 28-15-13 (d) (1)).

**TABLE 10.
RADIONUCLIDES**

CONTAMINANT	SOURCES / USES	MCL
Gross alpha	natural decay of uranium in rocks and soil	15 pCi/l
Gross beta	natural decay of uranium in rocks and soil, nuclear weapon production, pharmaceuticals	50 pCi/l or 4 mrem/yr
Radium 226 & 228	natural decay of uranium in rocks and soil	5 pCi/l
Strontium-90	artificial isotope, used in research and medicine, in industrial density measuring devices, in atomic batteries, in luminous paint	8 pCi/l
Tritium	man-made isotope, used as chemical tracer in research, in nuclear weapons production, in luminous instrument dials	20,000 pCi/l

MONITORED BUT NOT REGULATED

Uranium	natural decay of uranium in rocks and soil	30 ug/l
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Key: pCi/l = picoCurie per liter
mrem/yr = millirem per year

MONITORING RESULTS FOR RADIONUCLIDES

Three water systems incurred three MCL violations for combined radium 226 & 228 during 2002. The population affected by these MCL violations were 892. These water systems were notified by KDHE of the MCL violations and required to issue public notice. No water systems had radionuclide monitoring violations during 2002. The names of the systems which incurred radiological MCL violations are listed in Appendix B.

XII. CONSUMER CONFIDENCE REPORT (CCR)

The Consumer Confidence Report (CCR) rule is a new requirement from the 1996 Safe Drinking Water Act. It gives consumers more information on their drinking water quality and opportunities to get involved in protecting their source of water.

Under the CCR rule, all community water systems (CWSs) are required to provide customers with an annual water quality report or CCR. EPA specified certain health risk language for the reports, and required water systems to distribute these reports annually to all of their customers. CCRs summarize information to help educate and inform customers about their water system.

The guiding principle behind Consumer Confidence Reports is that all people have the right to know what is in their drinking water and where it comes from.

The CCR rule required the first report to contain data used to determine compliance in calendar year 1998, and to be delivered by October 1, 1999. All subsequent annual reports are due by July 1 and will include information from the previous calendar year.

By July 1, 2002, 916 community water systems were to deliver the CCR for calendar year 2001 to their customers, and send a copy of the actual report and a certificate of delivery to KDHE. The number of facilities in violation for not delivering a copy of their CCR to their customers by July 1, 2002 was 74. Notices of the violation were sent to the facilities on July 12, 2002, followed by phone calls to non-responding water systems. Ninety percent of community water systems are in compliance, 9 facilities have incurred violations, and submitted to EPA for enforcement action. The names of the systems that are in violation of the CCR rule are listed in Appendix B.

XIII. SUMMARY

Appendix A lists the number of MCL, treatment technique, and monitoring/reporting violations by regulated parameter. This information is entered into the State Drinking Water Information System (SDWIS). There were no violations for the majority of parameters. The following is a summary of parameters which incurred violations.

Bacteriological monitoring resulted in 47 water systems having coliform MCL violations, 7 of which also incurred acute MCL violations. These monitoring results translate to 96 percent of all systems being in compliance. The population affected by these MCL violations was 58,208 or less than 6 percent of the population served by all water systems. The number of systems with total coliform major monitoring violations was 37, with 49 violations. The population affected by these monitoring violations was 11,673 or 0.3 percent of the population served by all systems. Overall, 213 water systems had at least one bacteriological MCL or monitoring violation during 2002. This means that 873 water systems were in compliance with the total coliform rule.

In the organic contaminant group (**VOCs** and **SOCs**), no water systems incurred a monitoring or MCL violation during 2002.

In the inorganic contaminants (**IOCs**) group, **nitrate** and **selenium** were the only contaminants detected above the MCL during 2002. **Nitrate** MCL violations occurred in 31 out of 770 systems monitoring. This translates to a compliance rate of 97 percent of water systems in compliance. The population affected by these nitrate MCL violations was 20,716, or less than 1 percent of the total population served in Kansas.

Selenium was detected above the MCL in two of the 138 water systems required to monitor during 2002. This translates to 99 percent of water systems in compliance. The population affected by these two selenium MCL violations was 683 or less than 1 percent of the total population served in Kansas.

Lead and copper monitoring resulted in 10 water systems with monitoring violations. The number of systems monitoring for lead and copper was 461. During 2002, 74 percent of water systems were in compliance with monitoring requirements and 97% were in compliance for treatment installation and public education. Seven systems exceeded the copper action level, 4 systems exceeded the lead action level, and two additional systems exceeded both lead and copper action levels. One system failed to submit a treatment recommendation, and two systems failed to provide proof of public education.

Disinfection By-Product monitoring for **THMs** resulted in 2 water system received 2 MCL violations during 2002. These results translate to a THM compliance rate of 91 percent during 2002.

The **surface water treatment rule (SWTR)** had 18 water systems out of 109 water systems using surface water incurred violations. Of the 18 systems with violations, 10 water systems had 18 treatment technique violations, leaving 93 percent of water systems in compliance. 8 water systems had 12 monitoring/reporting violations, leaving 91 percent of water systems in compliance. Collectively, these results placed 92 percent of all systems regulated by the SWTR in compliance during 2002.

Radionuclide monitoring resulted in three water systems detecting radium 226/228 above the MCL. This amounts to a compliance rate of 99 percent with less than one percent of systems being in violation. The population affected by these radium MCL violations was 892.

Consumer Confidence Report (CCR) 916 community water systems were to deliver the CCR for calendar year 2001 to their customers by July 1, 2002. Sixty water systems were in violation of the July 1 due date. Nine public water systems have received a monitoring violation. The population affected by the 9 water systems is 1,231. This amounts to 90 percent of water systems in compliance.

The overall compliance rate for Kansas public water supplies with drinking water regulations during 2002 was 76 percent. A total of 305 water systems incurred at least one violation of a drinking water regulation. This left 781 water systems operating out of the 1,086 water systems having no violations during 2002.

Seventy-two percent of the Kansas population was served by water systems in compliance with federal and state drinking water regulations during 2002. Of the 2,547,297 people served by all water systems, 1,345,313 people were not affected by any violations. Forty-seven percent, or 1,201,984 people, were affected by water systems that had a monitoring or MCL violations.

The following table, shows the percentage of all water systems that had no monitoring and/or MCL violations occurring during 2002 for each specific drinking water regulation.

TABLE 11.
WATER SYSTEMS COMPREHENSIVE COMPLIANCE SUMMARY
FOR ALL VIOLATIONS

REGULATION	% IN COMPLIANCE
Total Coliform Rule - Monitoring Major & Minor Non-Acute Coliform	85 % 96 %
Nitrate / Nitrite	97 %
Inorganic Chemicals (IOCs)	99 %
Volatile Organic Compounds (VOCs)	100 %
Synthetic Organic Compounds (SOCs)	100 %
Total Trihalomethanes (TTHMs)	91 %
Lead and Copper Rule - Monitoring Treatment Installation	74 % 97%
Surface Water Treatment Rule	92%
Radionuclides Rule	99 %
Consumer Confidence Rule	90 %

Table 12, below, shows a comparison of the overall compliance percentages for all water systems over the last three years.

TABLE 12.
WATER SYSTEMS COMPLIANCE COMPARISON
FOR 2000, 2001 AND 2002

REGULATION	2000	2001	2002
Total Coliform Rule	97 %	Non-Acute - 96% Mon. Major/Min.- 97%	Non-Acute - 96% Mon. Major/Min.- 85%
Nitrate	97 %	97%	97%
Inorganic Chemicals (IOCs)	99 %	99%	99%
Volatile Organic Compounds (VOCs)	100 %	100%	100%
Synthetic Organic Compounds (SOCs)	100 %	100%	100%
Total Trihalomethanes (TTHMs)	99 %	93%	91%
Lead and Copper Rule- Monitoring Treatment Install.	99 %	94%	74% 97%
Surface Water Treatment Rule	93 %	92%	92%
Radionuclides Rule	99%	99%	99%
Consumer Confidence Rule	98%	99%	99%

DEFINITIONS

Action Levels - Used in place of MCL's. Triggers additional requirements but exceeding action levels does not constitute an MCL.

Cryptosporidium - A protozoan that causes cryptosporidiosis. Symptoms include acute intestinal distress and fever.

DBPR - Stage 1 Disinfection By-Product Rule requires conventional filtration systems to remove organic material from the water.

Detection - Some amount of contaminant was found, not necessarily in an amount that exceeds the MCL.

E. Coli - Escherichia coli. A bacteria which can cause acute intestinal distress.

Fecal Coliform - A bacteria used to indicate the presence of other disease causing organisms.

Fibers Per Liter - The number of fibers found in one liter of water and is the unit of measurement for asbestos. MFL is the abbreviation for Million Fibers per Liter.

Giardia Lamblia - A protozoan which causes giardiasis. Symptoms include diarrhea, fatigue and cramps.

Haloacetic Acids (HAA5) - Byproduct of drinking water disinfection.

IESWTR - Interim Enhanced Surface Water Treatment Rule. Purpose is to improve public health by controlling microbial contaminants, particularly Cryptosporidium.

IOC - Inorganic Compounds. Naturally occurring minerals, metals and salts.

MCL - Maximum Contaminant Level. The greatest concentration of a chemical allowed by EPA.

MCLG - Maximum Contaminant Level Goal. The level of a contaminant below which there is no known risk to health.

MCL Violation - Finding a contaminant in an amount greater than that allowed by EPA.

MG/L - Milligrams per liter. Roughly equivalent to ppm.

ND - Not Detected

NTU - Nephelometric turbidity units.

PCB - Polychlorinated Biphenyl.

pCi/l - Picocuries per liter. Unit of measurement for radioactive substances. A pCi/l is equivalent to two atoms disintegrating per minute per liter.

PPB - Parts per billion. Roughly equivalent to ug/l.

Regulated - Contaminants which require monitoring with specific MCL's which are set by EPA.

SOC - Synthetic Organic Compounds. Chemicals commonly used in pesticides, herbicides, plastics and fuels.

SWTR - Surface Water Treatment Rule. This regulation requires that surface water systems, "provide filtration and disinfection treatment of source water".

TOC - Total Organic Carbon. TOC has no health effects. However, total organic compound provides a medium for the formation of disinfection byproducts. These byproducts include TTHMs and HAA5s.

TTHM - Total Trihalomethanes. A byproduct of the disinfection process which have certain health effects.

Treatment Technique (TT) - A required treatment method used to reduce contaminants.

Turbidity - Suspended materials which cause water to become cloudy.

UG/L - Micrograms per liter. Roughly equivalent to ppb.

VOC - Volatile Organic Compounds. Chemicals that evaporate into the air. Commonly found in gasoline, paint, solvents, plastics and adhesives.

Appendix A
Violations Table
(with SDWIS Codes)

State:	KANSAS
Reporting Interval:	2002 Calendar Year

SDWIS Codes		MCL (mg/l) ¹	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
			Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations
	Organic Contaminants (VOC / SOC)							
2981	1,1,1-Trichloroethane	0.2	0	0			0	0
2977	1,1-Dichloroethylene	0.007	0	0			0	0
2985	1,1,2-Trichloroethane	0.005	0	0			0	0
2378	1,2,4-Trichlorobenzene	0.07	0	0			0	0
2931	1,2-Dibromo-3-chloropropane (DBCP)	0.0002	0	0			0	0
2980	1,2-Dichloroethane	0.005	0	0			0	0
2983	1,2-Dichloropropane	0.005	0	0			0	0
2063	2,3,7,8-TCDD (Dioxin)	3x10 ⁻⁸	0	0			0	0
2110	2,4,5-TP	0.05	0	0			0	0
2105	2,4-D	0.07	0	0			0	0
2265	Acrylamide				0	0		

State: KANSAS

**Reporting
Interval: 2002 Calendar Year**

SDWIS Codes		MCL (mg/l) ¹	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
			Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations
2051	Alachlor	0.002	0	0			0	0
2050	Atrazine	0.003	0	0			0	0
2990	Benzene	0.005	0	0			0	0
2306	Benzo[a]pyrene	0.0002	0	0			0	0
2046	Carbofuran	0.04	0	0			0	0
2982	Carbon tetrachloride	0.005	0	0			0	0
2959	Chlordane	0.002	0	0			0	0
2380	cis-1,2-Dichloroethylene	0.07	0	0			0	0
2031	Dalapon	0.2	0	0			0	0
2035	Di(2-ethylhexyl)adipate	0.4	0	0			0	0
2039	Di(2-ethylhexyl)phthalate	0.006	0	0			0	0
2964	Dichloromethane	0.005	0	0			0	0
2041	Dinoseb	0.007	0	0			0	0
2032	Diquat	0.02	0	0			0	0
2033	Endothall	0.1	0	0			0	0
2005	Endrin	0.002	0	0			0	0

State:	KANSAS
Reporting Interval:	2002 Calendar Year

SDWIS Codes		MCL (mg/l) ¹	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
			Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations
2257	Epichlorohydrin				0	0		
2992	Ethylbenzene	0.7	0	0			0	0
2946	Ethylene dibromide	0.00005	0	0			0	0
2034	Glyphosate	0.7	0	0			0	0
2065	Heptachlor	0.0004	0	0			0	0
2067	Heptachlor epoxide	0.0002	0	0			0	0
2274	Hexachlorobenzene	0.001	0	0			0	0
2042	Hexachlorocyclopentadiene	0.05	0	0			0	0
2010	Lindane	0.0002	0	0			0	0
2015	Methoxychlor	0.04	0	0			0	0
2989	Monochlorobenzene	0.1	0	0			0	0
2968	o-Dichlorobenzene	0.6	0	0			0	0
2969	para-Dichlorobenzene	0.075	0	0			0	0
2383	Total polychlorinated biphenyls	0.0005	0	0			0	0
2326	Pentachlorophenol	0.001	0	0			0	0

State: KANSAS

**Reporting
Interval: 2002 Calendar Year**

SDWIS Codes		MCL (mg/l) ¹	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
			Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations
2987	Tetrachloroethylene	0.005	0	0			0	0
2984	Trichloroethylene	0.005	0	0			0	0
2996	Styrene	0.1	0	0			0	0
2991	Toluene	1	0	0			0	0
2979	trans-1,2-Dichloroethylene	0.1	0	0			0	0
2955	Xylenes (total)	10	0	0			0	0
2020	Toxaphene	0.003	0	0			0	0
2036	Oxamyl (Vydate)	0.2	0	0			0	0
2040	Picloram	0.5	0	0			0	0
2037	Simazine	0.004	0	0			0	0
2976	Vinyl chloride	0.002	0	0			0	0
	Disinfectant By-Product							
0400	Failure to provide mon. plan	N/A	4	4			0	0
1008	Chlorine Dioxide	.8	0	0			1	1
1009	Chlorite/ClO ₂	1.0	0	0			1	1
2456	HAA5 MCL	0.060	2	2			0	0

State:	KANSAS
Reporting Interval:	2002 Calendar Year

SDWIS Codes		MCL (mg/l) ¹	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
			Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations
2920	Total Organic Carbon (TOC)	N/A	0	0	1	1	2	2
2940	Total Organic Carbon (TOC)	N/A	0	0			0	0
2950	Total Trihalomethanes	0.080	2	2			0	0
	Subtotal		8	8	1	1	4	4

State:	KANSAS
Reporting Interval:	2002 Calendar Year

SDWIS Codes		MCL (mg/l) ¹	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
			Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations
	Inorganic Contaminants (IOC)							
1074	Antimony	0.006	0	0			0	0
1005	Arsenic	0.05	0	0			0	0
1094	Asbestos	7 million fibers/l ≤ 10 µm long	0	0			0	0
1010	Barium	2	0	0			0	0
1075	Beryllium	0.004	0	0			0	0
1015	Cadmium	0.005	0	0			0	0
1020	Chromium	0.1	0	0			0	0
1024	Cyanide (as free cyanide)	0.2	0	0			0	0
1025	Fluoride	4.0	0	0			0	0
1035	Mercury	0.002	0	0			0	0
1040	Nitrate	10 (as Nitrogen)	52	26			0	0
1041	Nitrite	1 (as Nitrogen)	0	0			0	0
1045	Selenium	0.05	5	2			0	0

State:	KANSAS
Reporting Interval:	2002 Calendar Year

SDWIS Codes		MCL (mg/l) ¹	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
			Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations
1085	Thallium	0.002	0	0			0	0
1038	Total nitrate and nitrite	10 (as Nitrogen)	0	0			0	0

State:	KANSAS
Reporting Interval:	2002 Calendar Year

SDWIS Codes		MCL (mg/l) ¹	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
			Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations
	Radionuclide MCLs							
4000	Gross alpha	15 pCi/l	0	0			0	0
4010	Radium-226 and radium-228	5 pCi/l	3	3			0	0
4101	Gross beta	4 mrem/yr	0	0			0	0
	Subtotal Water Chemistry		60	31			0	0

State:	KANSAS
Reporting Interval:	2002 Calendar Year

SDWIS Codes		MCL (mg/l) ¹	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
			Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations
	Total Coliform Rule							
21	Acute MCL violation	Presence	7	7				
22	Non-acute MCL violation	Presence	42	40				
23,25	Major routine and follow up monitoring						49	37
28	Sanitary survey						0	0
	Subtotal		49	47 ¹			49	37

¹Includes the 7 acute violations and violators. These 7 systems incurred an acute (fecal) coliform violation (Code 21), and also had a total coliform violation (Code 22) the same month. Hence, subtotal number of violations is higher than the number of PWSs due to the fact some PWSs incurred more than one violation.

State:	KANSAS
Reporting Interval:	2002 Calendar Year

SDWIS Codes		MCL (mg/l) ¹	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
			Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations
	Surface Water Treatment Rule (SWTR)							
	Filtered systems							
36	Monitoring, routine/repeat						12	8
38	Indiv. Filter Monitoring Vio.						3	2
41	Treatment techniques				18	10		
	Unfiltered systems							
31	Monitoring, routine/repeat						0	0
42	Failure to filter				0	0		
	Subtotal				18	10	15	10

State:	KANSAS
Reporting Interval:	2002 Calendar Year

SDWIS Codes		MCL (mg/l) ¹	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
			Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations
	Lead and Copper Rule							
51	Initial lead and copper tap M/R						2	2
52	Follow-up or routine lead and copper tap M/R						10	10
57	Treatment Recommendation Violation				1	1		
65	Public education				2	2		
	Subtotal				3	3	12	12

1. Values are in milligrams per liter (mg/l), unless otherwise specified.

SDWIS CODES	Consumer Confidence Rule	MCL Number of Violations	MCLs Number of Systems With Violations	Treatment Techniques Number of violations	Treatment Techniques Number of Systems With Violations	Significant Monitoring/Reporting Number of Violations	Significant Number of Systems W/Vio. (Code SII)
71		65	65			9	9
72		18	18			0	0

Definitions for the Violations Table above

The following definitions apply to the Summary of Violations table.

Filtered Systems: Water systems that have installed filtration treatment [40 CFR 141, Subpart H].

Inorganic Contaminants: Non-carbon-based compounds such as metals, nitrates, and asbestos. These contaminants are naturally-occurring in some water, but can get into water through farming, chemical manufacturing, and other human activities. Regulations have established MCLs for 15 inorganic contaminants [40 CFR 141.62].

Lead and Copper Rule: This rule established national limits on lead and copper in drinking water [40 CFR 141.80-91]. Lead and copper corrosion pose various health risks when ingested at any level, and can enter drinking water from household pipes and plumbing fixtures. States report violations of the Lead and Copper Rule in the following six categories:

Initial lead and copper tap M/R: A violation where a system did not meet initial lead and copper testing requirements, or failed to report the results of those tests to the State.

Follow-up or routine lead and copper tap M/R: A violation where a system did not meet follow-up or routine lead and copper tap testing requirements, or failed to report the results.

Treatment installation: Violations for a failure to install optimal corrosion control treatment system or source water treatment system which would reduce lead and copper levels in water at the tap. [One number is to be reported for the sum of violations in both categories].

Lead service line replacement: A violation for a system's failure to replace lead service lines on the schedule required by the regulation.

Public education: A violation where a system did not provide required public education about reducing or avoiding lead intake from water.

Maximum Contaminant Level (MCL): The highest amount of a contaminant that is allowed in drinking water. MCLs ensure that drinking water does not pose either a short or long-term health risk. MCLs are defined in milligrams per liter (parts per million) unless otherwise specified.

Monitoring: Regulations specify which water testing methods the water systems must use, and sets schedules for the frequency of testing. A water system that does not follow this schedule or methodology is in violation [40 CFR 141].

States must report monitoring violations that are significant as determined by the EPA Administrator and in consultation with the States. For purposes of this report, significant monitoring violations are major violations and they occur when no samples are taken or no results are reported during a compliance period. A major monitoring violation for the surface water treatment rule occurs when at least 90% of the required samples are not taken or results are not reported during the compliance period.

Organic Contaminants: Carbon-based compounds, such as industrial solvents and pesticides. These contaminants generally get into water through runoff from cropland

or discharge from factories. Regulations set legal limits on 54 organic contaminants that are to be reported [40 CFR 141.61].

Radionuclides: Radioactive particles which can occur naturally in water or result from human activity. Regulations set legal limits on four types of radionuclides: radium-226, radium-228, gross alpha, and beta particle/photon radioactivity [40 CFR 141]. Violations for these contaminants are to be reported using the following three categories:

Gross alpha: A violation for alpha radiation above MCL of 15 picocuries/liter. Gross alpha includes radium-226 but excludes radon and uranium.

Combined radium-226 and radium-228: A violation for combined radiation from these two isotopes above MCL of 5 pCi/L.

Gross beta: A violation for beta particle and photon radioactivity from man-made radionuclides above 4 millirem/year.

SDWIS Code: Specific numeric codes from the Safe Drinking Water Information System (SDWIS) have been assigned to each violation type included in this report. The violations to be reported include exceeding contaminant MCLs, failure to comply with treatment requirements, and failure to meet monitoring and reporting requirements. Four-digit SDWIS Contaminant Codes have also been included in the chart for specific MCL contaminants.

Surface Water Treatment Rule (SWTR): The SWTR establishes criteria under which water systems supplied by surface water sources, or ground water sources under the direct influence of surface water, must filter and disinfect their water [40 CFR 141, Subpart H]. Violations of the “Surface Water Treatment Rule” are to be reported for the following four categories:

Monitoring, routine/repeat (for filtered systems): A violation for a system’s failure to carry out required tests, or to report the results of those tests.

Treatment techniques (for filtered systems): A violation for a system’s failure to properly treat its water.

Monitoring, routine/repeat (for unfiltered systems): A violation for a system’s failure to carry out required water tests, or to report the results of those tests.

Failure to filter (for unfiltered systems): A violation for a system’s failure to properly treat its water. Data for this violation code will be supplied to the States by EPA.

Total Coliform Rule (TCR): The Total Coliform Rule establishes regulations for microbiological contaminants in drinking water. These contaminants can cause short-term health problems. If no samples are collected during the one month compliance period, a significant monitoring violation occurs. States are to report four categories of violations:

Acute MCL violation: A violation where the system found fecal coliform or E. coli, potentially harmful bacteria, in its water, thereby violating the rule.

Non-acute MCL violation: A violation where the system found total coliform in samples of its water at a frequency or at a level that violates the rule. For systems collecting fewer than 40 samples per month, more than one positive sample for total coliform is a violation. For systems collecting 40 or more samples per month, more than 5% of the samples positive for total coliform is a violation.

Major routine and follow-up monitoring: A violation where a system did not perform any monitoring. [One number is to be reported for the sum of violations in these two categories.]

Sanitary Survey: A major monitoring violation if a system fails to collect 5 routine monthly samples if sanitary survey is not performed.

Treatment Techniques: A water disinfection process that is required instead of an MCL for contaminants that laboratories cannot adequately measure. Failure to meet other operational and system requirements under the Surface Water Treatment and the Lead and Copper Rules have also been included in this category of violation for purposes of this report.

Unfiltered Systems: Systems that do not need to filter their water before disinfecting it because the source is very clean [40 CFR, Subpart H].

Violation: A failure to meet any state or federal drinking water regulation. Most violations require the water system to perform public notification to its consumers of said violation.

PWS SYSTEMS WITH NITRATE MCL VIOLATIONS: 2002

	PWS NAME	STATE	EPA #	POP.	LOCATION	ZIP	# VIO.
1	ALMENA	A3500	KS2013701	469	ALMENA	67627	1
2	ARLINGTON	A8000	KS2015511	459	ARLINGTON	67514	1
3	BELPRE	B8000	KS2004701	100	BELPRE	67519	1
4	BURR OAK	E0000	KS2008906	265	BURR OAK	66936	
5	COMANCHE CO. RWD#2	F4511	KS2003303	155	COLDWATER	67029	1
6	CONTI BEEF. LLC -MHC	X0032	KS2006708	50	ULYSSES	67880	3
7	CONWAY SPRINGS	F7000	KS2019118	1322	CONWAY SPRINGS	67031	2
8	DOWNS	G8000	KS2014101	1038	DOWNS	67437	1
9	GREEN	J6500	KS2002703	147	GREEN	67447	3
10	GREENLEAF	J7000	KS2020106	351	GREENLEAF	66943	3
11	HAYS SUB. ESTATES	K5512	KS2005116	45	HAYS	67601	1
12	HIAWATHA	K8500	KS2001305	3417	HIAWATHA	66434	3
13	JEFFERSON CO RWD#15	J5310	KS2008721	228	GRANTVILLE	66429	3
14	JEWELL CO. RWD#1	O8010	KS2008907	959	ESBON	66941	4
15	KIRWIN	M7000	KS2014702	229	KIRWIN	67644	4
16	LANE CO RWD#1	K6510	KS2010102	300	HEALY	67850	2
17	LARNED ST. HOSPITAL	N0529	KS2014503	1065	LARNED	67550	1
18	LONG ISLAND	O1000	KS2014703	155	LONG ISLAND	67474	4
19	PONDEROSA MHP	O753C	KS2016110	20	MANHATTAN	66502	1
20	PRETTY PRAIRIE	T4000	KS2015501	670	PRETTY PRAIRIE	67570	2
21	SAPPA VALLEY RANCH	R4010	KS2103901	75	OBERLIN	67749	2
22	SCOTT CITY	U7510	KS2017101	3855	SCOTT CITY	67871	1
23	SUMNER CO. RWD#5	Y0510	KS2019101	585	CONWAY SPRINGS	67031	2
24	VIOLA	X3200	KS2017313	211	VIOLA	67149	2
25	WAKEFIELD	X5000	KS2002708	900	WAKEFIELD	67484	1
26	WHITE CITY	Y3000	KS2012703	518	WHITE CITY	66872	2

TOTAL POPULATION AFFECTED: 17,588

TOTAL VIOLATIONS: 52

TOTAL PWS SYSTEMS: 26

PWS SYSTEMS WITH NITRATE MONITORING VIOLATIONS: 2002

	PWS NAME	STATE	EPA #	POP.	LOCATION	ZIP	# VIO.
1	BURR OAK	E0000	KS2008906	265	BURR OAK	66936	1

TOTAL POPULATION AFFECTED: 265

TOTAL VIOLATIONS: 1

TOTAL PWS SYSTEMS: 1

NON-COMMUNITY PWS SYSTEMS WITH NITRATE MCL VIOLATIONS: 2002

	PWS NAME	STATE	EPA #	POP.	LOCATION	ZIP	# VIO.
1	CASEY'S GEN. STORE #1869	O6818	KS2117342	40	MAIZE	67101	1
2	FAIRFIELD H.S. USD #310	M9710	KS2115514	148	LANGDON	67583	3
3	IBP, INC.	L1241	KS2105525	2900	HOLCOMB	67851	4
4	PRATT AIRPORT	T3001	KS2115101	40	PRATT	67124	3
5	SUPPESVILLE GOLF COURSE	P7411	KS2119103	0	MILTON	67106	1

TOTAL POPULATION AFFECTED: 3128

TOTAL VIOLATIONS: 12

TOTAL PWS SYSTEMS: 5

PWS SYSTEMS WITH SELENIUM MCL VIOLATIONS: 2002

	PWS NAME	STATE ID#	EPA #	POP.	LOCATION	ZIP	# VIO.
1	GOVE	J4500	KS2006303	103	GOVE	67736	1
2	GLADE	J0700	KS2014708	80	GLADE	67639	4
3	LOGAN	O0500	KS2014701	603	LOGAN	67646	**1

****CITY OF LOGAN COMBINED ALL POES INTO ONE.**

TOTAL POPULATION AFFECTED: 786
TOTAL VIOLATIONS: 6
TOTAL PWS SYSTEMS: 3

PWS SYSTEMS WITH RADIONUCLIDE MCL VIOLATIONS: 2002

	PWS NAME	STATE ID	EPA #	POP.	LOCATION	ZIP	# VIO.
1	CLOUD CO. RWD#1	F6510	KS2002901	450	AURORA	67417	1
2	COOLIDGE	F7500	KS2000916	86	COOLIDGE	67836	1
3	PAWNEE ROCK	S5700	KS200916	356	PAWNEE ROC	67567	1

TOTAL POPULATION AFFECTED: 892
TOTAL VIOLATIONS: 3
TOTAL PWS SYSTEMS: 3

**PWS SYSTEMS WITH TOTAL COLIFORM
ACUTE MCL VIOLATIONS: 2002**

	PWS NAME	STATE ID	EPA #	POP.	LOCATION	ZIP	# VIO.
1	ALMENA	A3500	KS2103701	469	ALMENA	67622	1
2	CENTRE ELEM. USD#397	O2711	KS2111512	175	LOST SPRING	66859	1
3	DEARING	G2200	KS2012511	415	DEARING	67340	1
4	IOLA	L9000	KS2000103	6324	IOLA	66749	1
5	POTT. CO. RWD#3	X2510	KS2014904	1300	ONAGA	66521	1
6	SHAWNEE CO. RWD#2C	V2010	KS2017713	432	TOPEKA	66618	1
7	VALLEWOOD SUB.	O7517	KS2016129	240	MANHATTAN	66502	1

TOTAL POPULATION AFFECTED: 9,355
TOTAL VIOLATIONS: 7
TOTAL PWS SYSTEMS: 7

**PWS SYSTEMS WITH TOTAL COLIFORM
MCL VIOLATIONS: 2002**

	PWS NAME	STATE	EPA #	POP.	LOCATION	ZIP	# VIO.
1	ALEXANDER	A2000	KS2016503	75	ALEXANDER	67513	1
2	ALMENA	A3500	KS2013701	469	ALMENA	67622	1
3	BARTON HILLS ADD.	J5517	KS2000915	176	GREAT BEND	67530	1
4	CAMP KANZA	A0710	KS2115524	25	WICHITA	67201	1
5	CASEY'S GEN. STORE	O6818	KS2117342	40	MAIZE	67101	1
6	CASSODAY	E3500	KS2001501	130	CASSODAY	66842	1
7	CEDAR BLUFF S. SHORE	H4021	KS2119501	0	ELLIS	67637	1
8	CENTRE ELEM. USD#297	O2711	KS2111512	175	LOST SPRINGS	66859	1
9	CHENEY ST. PK. MARINA	K4020	KS2115502	25	CHENEY	67025	1
10	DEARING	G2200	KS2012511	415	DEARING	67340	1
11	DONIPHAN CO. RWD#2	B8310	KS2004303	167	BENDENA	66008	1
12	GARDEN CITY	I7500	KS2005511	28451	GARDEN CITY	67846	1
13	GAYLORD	I9000	KS2018301	145	GAYLORD	67638	1
14	GOESSEL	J2500	KS2011504	565	GOESSEL	67053	1
15	HORACE	L2500	KS2007101	743	HORACE	67879	1
16	IOLA	L9000	KS2000103	6324	IOLA	66749	1
17	JENNIE BARKER-USD#457	I7522	KS2105518	146	GARDEN CITY	67846	1
18	KINGMAN	M5500	KS2009503	3387	KINGMAN	67068	1
19	LABETTE CO. RWD#1	K0710	KS2009907	140	OSWEGO	67356	1
20	LABETTE CO. RWD#4	K0511	KS2009909	120	OSWEGO	67356	1
21	LAKE SIDE UMC CAMP	U7517	KS2117106	0	SCOTT CITY	67871	2
22	LIBERAL FEEDERS LP MHP	N7033	KS2017507	105	LIBERAL	67901	1
23	MAIZE PIZZA HUT	O6815	KS2117332	25	WICHITA	67209	1
24	MIAMI CO. RWD#3	R8510	KS2012104	2237	OSAWATOMIE	66064	1
25	NEOSHO CO. RWD#4	S5510	KS2013317	932	PARSONS	67357	1
26	NORTHERN SUN/ADM	J3540	KS2118101	43	GOODLAND	67735	1
27	OTIS	S0500	KS2016505	325	OTIS	67565	1
28	POTT. CO. RWD#3	X2510	KS2014904	1300	ONAGA	66521	1
29	RUSH CO. RWD#1	P2011	KS2016509	150	MCCRACKEN	67556	2
30	RUSSELL CO. RWD#1	U4010	KS2016707	64	RUSSELL	67665	1
31	SHAWNEE CO. RWD#2C	V2010	KS2019107	432	TOPEKA	66618	1
32	SUMNER CO. RWD#2	Y0511	KS2019107	365	WELLINGTON	67152	1
33	SUNNY ACRES MHC	Y3531	KS2017337	55	WICHITA	67216	1
34	VALLEY FALLS	X2000	KS2008710	1254	VALLEY FALLS	66088	1
35	VALLEYWOOD SUBDIV.	O7517	KS2016129	240	MANHATTAN	66502	1
36	VFW POST #8773	M3018	KS2106125	25	JUNCTION CITY	66441	1
37	WELLINGTON	VY0500	KS2019119	8647	WELLINGTON	67152	1
38	WESTERN ACRES	L6516	KS2015506	60	HUTCHINSON	67502	1
39	WHEATSTATE CAMP	Y3400	KS2101504	25	AUGUSTA	67010	1
40	WHITING	Y3400	KS2008513	206	WHITING	66552	1

TOTAL POPULATION AFFECTED: 58,208
TOTAL VIOLATIONS: 44
TOTAL PWS SYSTEMS: 40

PWS SYSTEMS WITH TOTAL COLIFORM MAJOR MONITORING VIOLATIONS: 2002

	PWS NAME	STATE	EPA #	POP.	LOCATION	ZIP	# VIO.
1	ALL SEASONS MHC	J5513	KS2000912	150	GREAT BEND	67530	1
2	ALLEN CO. RWD#16	Q0512	KS2000122	62	MORAN	66755	1
3	ALMENA	A3500	KS2013701	469	ALMENA	67622	2
4	BARNARD	B4000	KS2010503	123	BARNARD	67418	1
5	BELLE PLAINE	B6500	KS2019115	1708	BELLE PLAINE	67013	1
6	BURR OAK	E0000	KS2008906	265	BURR OAK	66936	1
7	CASEY'S GEN. STORE	O6818	KS2117342	40	MAIZE	67101	2
8	COLONIAL GARDENS MHP	O7538	KS2016118	1200	MANHATTAN	66502	1
9	CORBIN WATER ASSOC.	E1511	KS2019120	35	CALDWELL	67022	1
10	COUNTRY STORE@MAIZE	O6819	KS2117343	25	MAIZE	67101	2
11	DE-DEE'S I-70-MANHATTAN	O751H	KS2116111	25	MANHATTAN	66502	4
12	EASTON	G9500	KS2010301	362	EASTON	66020	1
13	EASTSIDE MHP	I7545	KS2005537	93	GARDEN CITY	67846	2
14	HEARTLAND COM. CHURCH	W5512	KS2110303	25	TONGANOXIE	66086	1
15	KANSAS SOLDIERS HOME	I3029	KS2005701	254	FORT DODGE	67843	1
16	LABETTE CO. RWD#1	K0710	KS2009907	140	OSWEGO	67356	1
17	LABETTE CO. RWD#4	K0511	KS2009909	120	OSWEGO	67356	1
18	LAKE SIDE UMC CAMP	U7517	KS2117106	0	SCOTT CITY	67871	1
19	LEAVENWORTH CO RWD#10	N1013	KS2010315	499	LINWOOD	66052	2
20	LIBERAL FEEDERS LP MHP	N7033	KS2017507	105	LIBERAL	67901	1
21	LONGHORN STEAKHOUSE	Y3546	KS2017346	65	WICHITA	67201	1
22	MIAMI CO RWD#4	O3010	KS2012108	395	DREXEL	64742	2
23	MONTGOMERY CO RWD#2	L8010	KS2012504	500	INDEPENDENCE	67301	1
24	OSAGE CO RWD#7	R8010	KS2013906	1430	OSAGE CITY	66523	1
25	PARK HILLS COUNTRY CLUB	T3014	KS2115109	25	PRATT	67124	1
26	PHEASANT ACRES	L6508	KS2015515	70	HUTCHINSON	67502	3
27	PRESTON	T3500	KS2015102	164	PRESTON	67583	1
28	RUSSELL CO. RWD#2	U4011	KS2016706	40	RUSSELL	67665	1
29	RUSSELL CO. RWD#4	J4010	KS2016705	90	RUSSELL	67665	1
30	STERLING	V9000	KS2015902	2642	STERLING	67579	1
31	STUCKEY'S PECAN SHOPPE	D4010	KS2119301	100	BREWSTER	67732	1
32	THUNDERBIRD MARINA	M3020	KS2106113	25	JUNCTION CITY	66441	1
33	TUTTLE TERRACE MHC	O7531	KS2016102	67	MANHATTAN	66502	1
34	WALLACE CO. RWD#1	Y1310	KS2019901	200	WESKAN	67762	1
35	WALTHER'S OIL	Q2510	KS2120103	25	CUBA	66940	1
36	WESTERN ACRES MHC	L6516	KS2015506	60	HUTCHINSON	67502	1
37	WESTSIDE MHP	I7543	KS2005526	75	GARDEN CITY	67846	2

TOTAL POPULATION AFFECTED:	11,673
TOTAL VIOLATIONS:	49
TOTAL PWS SYSTEMS:	37

**PWS SYSTEMS WITH TOTAL COLIFORM MINOR VIOLATIONS
MONITORING AND REPORTING VIOLATIONS: 2002**

	PWS NAME	STATE	EPA #	POP.	LOCATION	ZIP	# VIO.
1	ALMENA	A3500	KS2013701	469	ALMENA	67622	3
2	ANDERSON CO. RWD#2	Y2310	KS2000308	500	WESTPHALIA	66093	3
3	ANDERSON CO. RWD#5	M5210	KS2000306	2700	COLONY	66015	1
4	ARCADIA	A6500	KS2003711	391	ARCADIA	66711	1
5	ARGONIA	A7000	KS2019116	534	ARGONIA	67004	1
6	ATCHISON CO. RWD#1	B0013	KS2000503	490	ATCHISON	66002	1
7	ATCHISON CO. RWD#2	B0012	KS2000505	150	ATCHISON	66002	1
8	AUGUSTA MUN. AIRPORT	B2001	KS2101507	25	AUGUSTA	67010	1
9	AURORA	B2500	KS2002906	79	AURORA	67417	1
10	BARNARD	B4000	KS2010503	123	BARNARD	67418	2
11	BARTON CO. COM. COLLEGE	J5512	KS2000913	1000	GREAT BEND	67530	1
12	BARTON CO. RWD#2	J5511	KS2000907	344	GREAT BEND	67530	1
13	BARTON HILLS ADD.	J5517	KS2000915	176	GREAT BEND	67530	1
14	BEATTIE	B6000	KS2011712	277	BEATTIE	66406	1
15	BELLE PLAINE	B6500	KS2019115	1708	BELLE PLAINE	67013	1
16	BELPRE	B8000	KS2004701	104	BELPRE	67519	3
17	BISHOP SEABURY ACADEMY	N1015	KS2104506	125	LAWRENCE	66046	1
18	BLASI DAY CARE	U3540	KS2117336	80	WICHITA	67215	2
19	BOURBON CO RWD#2C	I3514	KS2001103	5425	FT. SCOTT	66701	2
20	BURR OAK	E0000	KS2008906	265	BURR OAK	66936	2
21	CAMP HAWK	R0525	KS2107908	25	NEWTON	67114	1
22	CAPALDO WATER ASSN.	S8510	KS2003715	152	FRONTENAC	66762	1
23	CARBONDALE	E3000	KS2013914	1560	CARBONDALE	66414	1
24	CASEY'S GEN. STORE #1869	O6818	KS2117342	40	MAIZE	67101	5
25	CHEROKEE CO. RWD#1	F9610	KS2002111	575	CRESTLINE	66728	1
26	CLAY CO. RWD#2	F0510	KS2002710	950	CLAY CENTER	67432	1
27	COLLYER	F5000	KS2019502	133	COLLYER	67631	1
28	COLORADO INTERSTATE GAS	H3040	KS2112902	132	RICHFIELD	67953	1
29	COMANCHE CO. RWD#1	T4510	KS2003301	77	PROTECTION	67127	1
30	CONCORDIA TEXACO PLAZA	F6512	KS2102904	25	CONCORDIA	66901	1
31	CORBIN WATER ASSOC.	E1511	KS2019120	35	CALDWELL	67022	2
32	COUNTRY STORE@MAIZE	O6819	KS2117343	25	MAIZE	67101	2
33	CRAWFORD CO. RWD#1	I5510	KS2003703	365	PITTSBURG	66762	1
34	DEDEE'S I-70 (MANHATTAN)	O751H	KS2116111	25	MANHATTAN	66502	2
35	DELIA	G3500	KS2008507	179	DELIA	66418	2
36	DENISON	G4500	KS2008505	231	DENISON	66419	1
37	DESOTO-SFAAP	N1010	KS2009122	346	DESOTO	66018	1
38	DONIPHAN CO. RWD#1	N4710	KS2004305	75	ROBINSON	66532	4
39	DONIPHAN CO. RWD#5	X9010	KS2004307	1320	WATHENA	66090	1
40	DUTCH KITCHEN	L6513	KS2115505	25	HUTCHINSON	67501	1
41	EAST GARDEN VILLAGE MHP	I7542	KS2005543	2800	GARDEN CITY	67846	1
42	EASTON	G9500	KS2010301	362	EASTON	66020	1
43	ELGIN	H2000	KS2001901	82	ELGIN	67361	1
44	ELYRIA CHRISTIAN SCHOOL	P4013	KS2111311	250	MCPHERSON	67460	2
45	FRANKLIN CO. RWD#1	Y1010	KS2005915	600	OTTAWA	66067	1
46	FRANKLIN CO. RWD#4	T4210	KS2005913	2281	WILLIAMSBURG	66095	1
47	GIRARD	J0500	KS2003718	2773	GIRARD	66743	1
48	GREAT BEND	J5510	KS2000911	15345	GREAT BEND	67530	2

49	GREAT BEND IND. PARK	J5501	KS2100910	1500	GREAT BEND	67530	1
50	GREEN ACRES MHP	G6532	KS2005707	84	DODGE CITY	67801	1
51	GREENWOOD CO. RWD#1	V0510	KS2007305	1208	EUREKA	67045	1
52	HARVEY CO. RWD#1	S6511	KS2007907	2565	WALTON	67151	2
53	HAVEN	K4000	KS2015514	1175	HAVEN	67543	1
54	HEARTLAND COM. CHURCH	W5512	KS2110303	25	TONGANOXIE	66086	1
55	HILL CITY	K9500	KS2006503	1604	HILL CITY	67642	1
56	HOYT	L4500	KS2008501	571	HOYT	66440	2
57	JACKSON CO. RWD#1	P1511	KS2008511	1300	HOYT	66440	1
58	JEWELL	M2000	KS2008902	483	JEWELL	66949	1
59	JOHNSTON TRLR. COURT	M3032	KS2006116	25	JUNCTION CITY	66441	1
60	KANORADO	M4000	KS2018101	248	KANORADO	67741	1
61	KPL JEFFREY ENERGY CTR	V7510	KS2114901	302	ST. MARYS	66536	1
62	LA HARPE	M8700	KS2000105	706	LA HARPE	66751	1
63	LATHAM	N0800	KS2001517	164	LATHAM	67072	1
64	LEAVENWORTH CO. RWD#7	D3510	KS2010320	2614	BONNER SPRINGS	66012	1
65	LEAVENWORTH CO. RWD#8	N1513	KS2010309	960	LEAVENWORTH	66048	1
66	LECOMPTON	N3000	KS2004501	608	LECOMPTON	66050	1
67	LOGAN	O0500	KS2014701	603	LOGAN	67646	2
68	LONGHORN STEAKHOUSE	Y3546	KS2017346	65	WICHITA	67215	1
69	LUCAS	O3500	KS2016702	436	LUCAS	67648	1
70	MANCHESTER	O7000	KS2004103	102	ABILENE	67410	1
71	MEDICINE LODGE	P5000	KS2000702	2193	MEDICINE LODGE	67104	1
72	MELVERN	P5500	KS2013905	429	MELVERN	66510	1
73	MELVERN RES ARROW ROCK	N2522	KS2113903	25	MELVERN	66510	1
74	METRO TOPEKA AIRPORT	W6002	KS2117703	500	TOPEKA	66619	1
75	MIAMI CO. RWD#2	S4010	KS2012101	8631	HILLSDALE	66036	1
76	MIAMI CO. RWD#4	O3010	KS2012108	395	DREXEL	64742	1
77	MILTONVALE	P7500	KS2002903	523	MILTONVALE	67466	1
78	MINNEAPOLIS	P8000	KS2014301	2046	MINNEAPOLIS	67467	1
79	MONTGOMERY CO. RWD#10	G2210	KS2012515	400	COFFEYVILLE	67337	2
80	MONTGOMERY CO. RWD#8	L8013	KS2012507	253	INDEPENDENCE	67301	1
81	MORNING STAR RANCH	I2010	KS2111513	35	FLORENCE	66851	3
82	MOSCOW	Q3400	KS2018902	247	MOSCOW	67952	2
83	MULBERRY	Q5000	KS2003710	577	MULBERRY	66756	1
84	MULVANE	Q6000	KS2019113	5300	MULVANE	67110	2
85	NARKA	Q8000	KS2015707	93	NARKA	66960	1
86	NEW STRAWN	V9210	KS2003105	500	NEW STRAWN	66839	1
87	NORCATUR	R1500	KS2003902	169	NORCATUR	67653	1
88	OAKLEY	R3500	KS2010901	2173	OAKLEY	67748	1
89	OSAGE CO. RWD#4	X9510	KS2013917	486	WAVERLY	66871	1
90	OSAGE CO. RWD#7	R8010	KS2013906	1430	OSAGE CITY	66523	1
91	PARKS HILLS COUNTRYCLUB	T3014	KS2115109	25	PRATT	67124	2
92	POSSIE'S PLACE	T6510	KS2116112	0	RANDOLPH	66554	1
93	POTTAWATOMIE CO. RWD#2	R7010	KS2014906	470	OLSBURG	66520	1
94	PRATT LIVESTOCK	T3011	KS2115107	25	PRATT	67124	1
95	RENO CO. RWD#3	Y7710	KS2015516	450	YODER	67585	1
96	REPUBLIC	T8500	KS2015709	161	REPUBLIC	66964	1
97	ROBINSON	U1500	KS2001301	216	ROBINSON	66532	1
98	RUSSELL CO. RWD#4	J4010	KS2016705	90	RUSSELL	67665	1
99	SAWYER	U6000	KS2015101	124	SAWYER	67134	1
100	SCOTT CITY	U7510	KS2017101	3855	SCOTT CITY	67871	1

101	SCRANTON	U8000	KS2013911	724	SCRANTON	66537	2
102	SEVERY	V0500	KS2007308	359	SEVERY	67137	1
103	SOLOMON	V4000	KS2004105	1072	SOLOMON	67480	1
104	SOUTH HAVEN	V4500	KS2019104	390	SOUTH HAVEN	67140	1
105	SPEARVILLE	V5000	KS2005712	813	SPEARVILLE	67876	1
106	ST. GEORGE	V6700	KS2014917	434	ST. GEORGE	66535	2
107	ST. JOSEPH'S SCHOOL	Q4510	KS2115513	80	MOUNT HOPE	67108	1
108	ST. PAUL'S LUTHERAN SCHL	K4014	KS2115519	50	HAVEN	67543	1
109	ST. PETER'S SCHOOL	U7310	KS2117334	163	WICHITA	67213	1
110	STUCKEY'S DQ#192-GRINNELL	J9010	KS2106303	25	GRINNELL	67738	2
111	STUCKEY'S PECAN SHOPPE	D4010	KS2119301	100	BREWSTER	67732	4
112	SUNDOWNER WEST MHP	U5021	KS2016910	220	SALINA	67401	3
113	SUNFLOWER ELECTRIC	L1242	KS2105528	156	HOLCOMB	67851	1
114	SUPPESVILLE GOLF COURSE	P7411	KS2119103	0	MILTON	67106	1
115	SUSANK	W1500	KS2000901	57	SUSANK	67544	2
116	THUNDERBIRD MARINA	M3020	KS2106113	25	JUNCTION CITY	66441	1
117	TIMKEN	W4500	KS2016504	83	TIMKEN	67575	2
118	TORONTO	W6500	KS2020701	312	TORONTO	66777	1
119	VIRGIL	X3500	KS2007307	113	VIRGIL	66870	1
120	WALNUT	X6500	KS2003701	450	WALNUT	66780	1
121	WALTHER'S OIL/15-36	Q2510	KS2120103	25	CUBA	66940	2
122	WATERVILLE	X8500	KS2011703	681	WATERVILLE	66548	1
123	WAVERLY	X9500	KS2003108	589	WAVERLY	66871	1
124	WELLINGTON	Y0500	KS2019119	8647	WELLINGTON	67152	1
125	WHITE CLOUD	Y3100	KS2004309	239	WHITE CLOUD	66094	1
126	WHITING	Y3400	KS2008513	206	WHITING	66552	1
127	WILLIS	Y4200	KS2001311	69	HOLTON	66436	1
128	WILSEY ELEM. USD#417	Y4410	KS2112706	90	WILSEY	66873	2
129	YMCA CAMP HYDE	Y3570	KS2117351	300	VIOLA	67149	2

TOTAL POPULATION AFFECTED:	111,394
TOTAL VIOLATIONS:	174
TOTAL PWS SYSTEMS:	129

**PWS SYSTEMS WITH SURFACE WATER TREATMENT VIOLATIONS
MONITORING, ROUTINE/REPEAT: 2002**

	PWS NAME	STATE	EPA #	POP.	LOCATION	ZIP	# VIO.
1	ATCHISON	B0010	KS2000506	10232	ATCHISON	66502	3
2	CEDARVALE	E4500	KS2001902	723	CEDARVALE	67024	2
3	ELK CITY	H2500	KS2012520	305	ELK CITY	67344	1
4	ESKRIDGE	H9500	KS2019703	589	ESKRIDGE	66423	1
5	RICHMOND	U0000	KS2005904	510	RICHMOND	66080	1
6	ROCK SPRINGS 4-H	M3013	KS2106114	63	JUNCTION CITY	66441	1
7	SEVERY	V0500	KS2007308	359	SEVERY	67137	1
8	TORONTO	W6500	KS2020701	312	TORONTO	66777	2

TOTAL POPULATION AFFECTED: 13,093
TOTAL VIOLATIONS: 12
TOTAL PWS SYSTEMS: 8

**PWS SYSTEMS WITH SURFACE WATER TREATMENT
TECHNIQUE VIOLATIONS: 2002**

	PWS NAME	STATE	EPA #	POP.	LOCATION	ZIP	# VIO.
1	ATCHISON	B0010	KS2000506	10232	ATCHISON	66002	6
2	AUGUSTA	B2000	KS2001503	88839	AUGUSTA	67010	1
3	BAXTER SPRINGS	B5000	KS2002109	4602	BAXTER SPRINGS	66713	2
4	BUFFALO	D6500	KS2020511	284	BUFFALO	66717	1
5	CEDARVALE	E4500	KS2001902	723	CEDARVALE	67024	1
6	ELK CITY	H2500	KS2012520	305	ELK CITY	67344	1
7	HILLSBORO	L0000	KS2011505	2854	HILLSBORO	67063	1
8	MADISON	O6000	KS2007301	857	MADISON	66860	1
9	SEDAN	U8500	KS2001903	1342	SEDAN	67361	2
10	UNIVERSITY PARK	O7513	KS2016103	109	MANHATTAN	66502	2

TOTAL POPULATION AFFECTED: 110,147
TOTAL VIOLATIONS: 18
TOTAL PWS SYSTEMS: 10

**PWS SYSTEMS INDIVIDUAL FILTER
MONITORING VIOLATIONS: 2002**

	PWS NAME	STATE	EPA #	POP.	LOCATION	ZIP	# VIO.
1	ATCHISON	B0010	KS2000506	10140	ATCHISON	66002	1
2	LAWRENCE	N1000	KS2004503	80098	LAWRENCE	66044	2

TOTAL POPULATION AFFECTED: 90,238
TOTAL VIOLATIONS: 3
TOTAL PWS SYSTEMS: 2

**PWS SYSTEMS WITH LEAD AND COPPER
PUBLIC EDUCATION VIOLATIONS: 2002**

	PWS NAME	STATE	EPA #	POP.	LOCATION	ZIP	# VIO.
1	PHEASANT ACRES	L6508	KS2015515	70	HUTCHINSON	67501	1
2	SENECA	V0000	KS2013102	2122	SENECA	66538	1

TOTAL POPULATION AFFECTED: 2,192
TOTAL VIOLATIONS: 2
TOTAL PWS SYSTEMS: 2

PWS SYSTEMS FAILURE TO COMPLETE INITIAL MONITORING VIOLATIONS: 2002

	PWS NAME	STATE	EPA#	POP.	LOCATION	ZIP	# VIO.
1	CORBIN WATER ASSOC.	E1511	KS2019120	35	CALDWELL	67022	1
2	ELYRA CHRISTIAN SCHL	P4013	KS2111311	250	MCPHERSON	67460	1

TOTAL POPULATION AFFECTED: 285
TOTAL VIOLATIONS: 2
TOTAL PWS SYSTEMS: 2

**PWS SYSTEMS WITH LEAD AND COPPER VIOLATIONS
FOLLOW-UP OR ROUTINE LEAD/COPPER TAP MONITORING: 2002**

	PWS NAME	STATE	EPA #	POP.	LOCATION	ZIP	# VIO.
1	ALL SEASONS MHP	J5513	KS2000912	150	GREAT BEND	67530	1
2	DE SOTO	G2500	KS2009102	4561	DE SOTO	66018	1
3	HAMILTON	K1000	KS2007303	334	HAMILTON	66853	1
4	MADISON	O6000	KS2007301	857	MADISON	66860	1
5	NORWICH	R3000	KS2009505	551	NORWICH	67118	1
6	OSAGE CO. RWD#7	R8010	KS2013906	1430	OSAGE CITY	66523	1
7	RICHMOND	U0000	KS2005904	510	RICHMOND	66080	1
8	SUMNER CO. RWD#5	Y0510	KS2019101	585	CONWAY SPRINGS	67031	1
9	WESTERN ACRES MHP	L6516	KS2015506	60	HUTCHINSON	67502	1
10	WICHITA	Y3500	KS2017308	350982	WICHITA	67203	1

TOTAL POPULATION AFFECTED: 360,020
TOTAL VIOLATIONS: 10
TOTAL PWS SYSTEMS: 10

**PWS SYSTEMS WITH LEAD AND COPPER
TREATMENT RECOMMENDATION VIOLATIONS: 2002**

	PWS NAME	STATE	EPA #	POP.	LOCATION	ZIP	# VIO.
1	LEBANON	N2000	KS2018304	303	LEBANON	66952	1

TOTAL POPULATION AFFECTED: 303
TOTAL VIOLATIONS: 1
TOTAL PWS SYSTEMS: 1

PWS SYSTEMS WITH TTHM VIOLATIONS: 2002

	PWS NAME	STATE	EPA #	POP.	LOCATION	ZIP	# VIO.
1	PARSONS	S5500	KS2009914	11154	PARSONS	67357	1
2	PWWSD #11-BONE CR.	A6509	KS2003725	0	GIRARD	66743	1

TOTAL POPULATION AFFECTED: 11,154
TOTAL VIOLATIONS: 2
TOTAL PWS SYSTEMS: 2

PWS SYSTEMS WITH HAA5 VIOLATIONS: 2002

	PWS NAME	STATE	EPA #	POP	LOCATION	ZIP	# VIO.
1	LEAVENWORTH W.D.	N1500	KS2010317	43046	LEAVENWORTH	66048	1
2	PWWSD#11-BONE CR.	A6509	KS2003725	0	GIRARD	66743	1

TOTAL POPULATION AFFECTED: 43,046
TOTAL VIOLATIONS: 2
TOTAL PWS SYSTEMS: 2

PWS SYSTEMS FAILURE TO MONITOR - CHLORITE: 2002

	PWS NAME	STATE	EPA #	POP.	LOCATION	ZIP	# VIO.
1	W.D. #1 JOHNSON CO.	P9010	KS2009110	331900	KANSAS CITY	66106	1

TOTAL POPULATION AFFECTED: 331,900
TOTAL VIOLATIONS: 1
TOTAL PWS SYSTEMS: 1

PWS SYSTEMS FAILURE TO MONITOR - CHLORINE DIOXIDE: 2002

	PWS NAME	STATE	EPA #	POP.	LOCATION	ZIP	# VIO.
1	W.D. #1 JOHNSON CO.	P9010	KS2009110	331900	KANSAS CITY	66106	1

TOTAL POPULATION AFFECTED: 331,900
TOTAL VIOLATIONS: 1
TOTAL PWS SYSTEMS: 1

PWS SYSTEMS WITH TREATMENT TECHNIQUE VIOLATIONS TOC: 2002

	PWS NAME	STATE	EPA #	POP.	LOCATION	ZIP	# VIO.
1	OLATHE	R6000	KS2009115	92962	OLATHE	66051	1

TOTAL POPULATION AFFECTED: 92,962

TOTAL VIOLATIONS: 1

TOTAL PWS SYSTEMS: 1

PWS SYSTEMS FAILURE TO PROVIDE MONITORING PLAN: 2002

	PWS NAME	STATE	EPA #	POP.	LOCATION	ZIP	# VIO.
1	ATCHISON	B0010	KS2000506	10140	ATCHISON	66002	1
2	LEAVENWORTH	N1500	KS2010317	43046	LEAVENWORTH	66048	1
3	PWWSD #11-BONE CR	A6509	KS2003725	0	GIRARD	66743	1
4	WINFIELD	Y6000	KS2003513	12206	WINFIELD	67156	1

TOTAL POPULATION AFFECTED: 65,392

TOTAL VIOLATIONS: 4

TOTAL PWS SYSTEMS: 4

PWS SYSTEMS WITH MONITORING VIOLATIONS TOC: 2002

	PWS NAME	STATE	EPA #	POP.	LOCATION	ZIP	# VIO.
1	ATCHISON	B0010	KS2000506	10140	ATCHISON	66002	1
2	WINFIELD	Y6000	KS2003513	12206	WINFIELD	67156	1

TOTAL POPULATION AFFECTED: 22,346

TOTAL VIOLATIONS: 2

TOTAL PWS SYSTEMS: 2

PWS SYSTEMS WITH MAJOR CONSUMER CONFIDENCE REPORT (CCR) VIOLATIONS: 2002

	PWS NAME	STATE #	EPA #	POP.	LOCATION	ZIP	# VIO.
1	COOLIDGE	F7500	KS2007501	86	COOLIDGE	67836	1
2	CORBIN WATER ASSOC.	E1511	KS2019120	35	CALDWELL	67022	1
3	EAST GARDEN MHP	U2530	KS2001508	200	ROSE HILL	67133	1
4	ELLIS CO. RWD#7	K5516	KS2005123	225	HAYS	67601	1
5	GRAINFIELD	J5000	KS2006302	327	GRAINFIELD	67737	1
6	LEAVENWORTH CO. #1	N1514	KS2010316	90	LEAVENWORTH	66048	1
7	WESTERN ACRES	L6516	KS2015506	60	HUTCHINSON	67502	1
8	WHITING	Y3400	KS2008513	206	WHITING	66552	1
9	WILSON CO. RWD#9A	Y7510	KS2020523	2	TORONTO	66777	1

TOTAL POPULATION AFFECTED: 1,231
TOTAL VIOLATIONS: 9
TOTAL PWS SYSTEMS: 9

APPENDIX C

**LIST OF KDHE CONTACTS
FOR ADDITIONAL INFORMATION**

KDHE - BUREAU OF WATER
PUBLIC WATER SUPPLY www.kdhe.state.ks.us
1000 SW JACKSON - SUITE 420
TOPEKA, KANSAS 66612-1367

Director, Bureau of Water
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Public Water Supply Section Chief
DAVE WALDO.....(785) 296-5514

Capacity Development
CATHY TUCKER-VOGEL.....(785) 298-7130

Engineering and Permits
DAN CLAIR..... (785) 296-5516

Engineering Plan Review
REX COX..... (785) 296-5539

Compliance and Data Management Unit Chief
DARREL PLUMMER.....(785) 296-5523

Monitoring and Compliance Coordinator
JONATHAN HAYNES.....(785) 296-0643

Enforcement and Regulation Development
KELLY KELSEY.....(785)296-6297

Regulation Development
STEVE FROST.....(785) 296-5505

Consumer Confidence Report, Annual Compliance Report
PATTI CROY.....(785) 296-3016

Bacteriological, Surface Water Treatment
JEAN HERROLD.....(785) 296-5518

Lead and Copper, Disinfection By-Products, Radiological
RON CRAMER.....(785) 296-5946

Inorganics, Volatile and Synthetic Organic Compounds, Nitrate
JEFFREY HAND.....(785) 368-8336

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Data Management
ELLAN SPIVEY.....(785) 296-6434

Data Entry
KATHY FRITTS.....(785) 296-7111

Administrative Assistant
LINDA WHITE.....(785) 296-5514

Operator Certification
VICKIE JO WESSEL.....(785) 296-2976

Source Water Assessment
ROB BEILFUSS.....(785) 296-5535

Kansas PWS Loan Fund, Intended Use Plan
WILLIAM CARR.....(785) 296-0735

As required by the Safe Drinking Water Act the State of Kansas has made the 2002 Public Water Systems report available to public. Interested individuals can obtain a copy of the 2002 Annual Compliance Report for the State of Kansas by accessing:

State Website: www.kdhe.state.ks.us/pws/

Telephone: (785) 296-3016

Fax Number (785) 296-5509

E-Mail: pcroy@kdhe.state.ks.us

Address of Responsible State Department: Kansas Dept. of Health and Environment
Bureau of Water
1000 SW Jackson - Suite 420
Topeka, Kansas 66612-1367

Contact Name: Patti J. Croy